

**RESEARCH REPORT 20**

**CRI**  
CENTRE FOR  
THE STUDY OF  
REGULATED  
INDUSTRIES

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**RISK AND THE REGULATORY STATE**  
**~ A BETTER REGULATION PERSPECTIVE**

**Ian Bartle**  
**Peter Vass**

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# **RISK AND THE REGULATORY STATE**

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PERSPECTIVE ~**

**Ian Bartle  
Peter Vass**

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# PREFACE

The CRI is pleased to publish research report 20, Risk and the Regulatory State – A Better Regulation Perspective, by Ian Bartle and Peter Vass. The report is the last of four research reports which have addressed key themes in the design of the regulatory state and the development of better policy making and regulation. The other three were Self-Regulation and the Regulatory State – A Survey of Policy and Practice (17), Economic Regulators and Sustainable Development – Promoting Good Governance (18), and Climate Change Policy and the Regulatory State – A Better Regulation Perspective (19).

We gratefully acknowledge the financial support of the Health and Safety Executive, the National Audit Office and the Environment Agency towards the research. We also thank those who we interviewed, and those who commented on the draft report, for their time and for their views. This also includes those who attended our policy seminar on 7<sup>th</sup> April, which was held as part of the research, for their contribution to the debate, and particularly to the three introductory commentators at the seminar, Judith Hackitt, Chair of the HSE, Donald Macrae, a member of the Risk and Regulation Advisory Council, and Sir Christopher Foster, Chairman of the Better Government Initiative. The report remains, of course, the responsibility of the authors, and does not necessarily represent the views of any of those who have contributed in one way or another to our research.

The report has two distinct parts. First, a Policy Overview: Implications and Possibilities. This is followed by the Research Report. The policy overview is grounded in the research but develops a range of issues from the better regulation perspective, and makes a number of proposals for discussion. The report has attempted to make a contribution to the understanding and definition of ‘public risk’, the complexities of risk analysis and valuation, particularly by comparing technocratic and socio-political perspectives, the integration of public policy theories through an ‘institutionist’ approach, and to the practical means by which good government principles and processes should be codified and institutionalised. A key element of this is the proposal for the existing impact assessment method to be developed more fully into an accountable approach built on ‘decision analysis’.

Peter Vass  
Director, CRI  
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June 2008



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## **POLICY OVERVIEW: Implications and Possibilities**

*This section steps back and considers more generally the policy implications and possibilities which have arisen from the research and the application of a 'better regulation' perspective. It is not, therefore, a summary of the research report, which follows. The research report focuses on the technocratic and socio-political analysis of risk, and the role of impact assessment in the policy process, and has a research conclusion. This section is grounded on the research, but extends the analysis on some general issues, and makes proposals for discussion. The overview covers the definition and control of 'public risk', unbundling risk and valuation, the integration of theories of public policy making (utilising an 'institutionist' perspective which promotes public interest outcomes), codification of four 'missing' principles of good government, and embedding a more complete form of 'decision analysis' into the policy process. Key conclusions relate to the need for greater institutionalisation of the principles and processes of good government, from which better policy and decision making with respect to the management of public risks can emerge and be sustained.*

### **Introduction**

The management of risk has become the core rhetoric of regulatory governance, as it has for corporate governance. No regulator, or minister, overlooks the opportunity of declaring that they are a 'risk-based' regulator or policy maker, and yet there is still a need for analysis and review of both principles and practice. The Better Regulation Commission (BRC) set out a challenge on the assessment of public risks in 2006, and asked whether the public, and government, have become too 'risk-averse'. The challenge was taken up by the prime minister, and the Risk and Regulation Advisory Council (RRAC) was established in 2008. These developments were the catalyst for the research project.

The research project has examined risk and the regulatory state from a better regulation perspective. It has attempted, in general terms, to link ideas and debates about risk, and the management of risk, to questions about the roles and responsibilities of governments. The 'better regulation perspective' is to set a framework which asks about, not just what governments do, and why, but about the criteria (or benchmarks) which are necessary to help judge what governments should be doing, and provide a discipline towards good decision making. In this respect we have therefore taken an integrated, dynamic 'public interest' model of the state, and not simply sought to describe in a static sense what governments do, which might be explained by various interest group theories. The core theme therefore aspires to be a better government perspective, focused on which 'public risks' the government should provide for, or manage, and the control of the associated political and regulatory risk which can undermine cost-effective outcomes with regard to public risks.

The research, debates and associated literature are set out in the report which follows this policy overview. The overview focuses on the practical policy implications and conclusions arising out of the research, including evidence from interviews and the policy seminar (7th April 2008) held as part of the research, but also extends the analysis more generally. We have focused on generic issues of risk and risk management, in association with the principles and processes of better regulation, because, in its particulars, government is an extremely complex business. The extant span of government regulation, service provision, and involvement in the life of its citizens, cannot be encompassed by a simple explanation, or mechanistic, 'optimising' formulae, given the legacy of political history, the power of interest

groups, and the ‘inertia’ (or constraints) of past decisions, statutory requirements and practices. It can be hard to judge, therefore, whether particular government and regulatory decisions are the best decisions that could have been taken, taking everything into account, or whether they have fallen short, and should reasonably have been better decisions at the time. What becomes clear, however, is that the ‘way of doing things’ can have an important influence on whether better decisions, in general, can be taken. The consequence of this is that we have focused on the practical means by which good government principles can be given effect through codification and institutionalisation.

### ***Unifying the Theory of Public Policy***

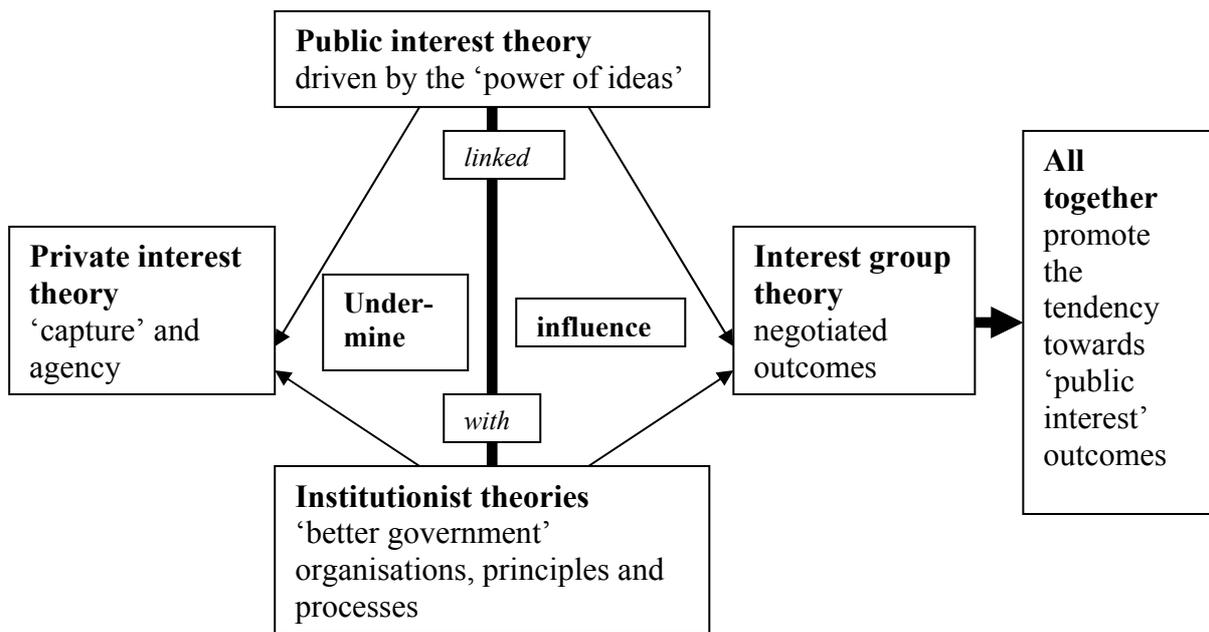
What governments do, compared with the normative precepts of public interest theory, is normally seen to be explained by ‘positive’ theories, such as interest group theory or private interest theories, including capture and agency theories. Interest group theories look to the distribution of power among interested parties (‘negotiating’ groups, including public opinion) to explain outcomes, and the distribution of this power might be widespread (as in pluralism), or concentrated (as in corporatism), where the major players dominate, and exclude others (typical examples being ‘big business’ and unionised labour). Private interest theories reflect a more malign motive, whereby the special interests act specifically against the public interest in their own favour, either wielding covert influence (capture), or abusing their monopoly power over asymmetric information (incomplete contracts). The latter is a bureaucratic theory (agency), and typically refers to company boards, nationalised industry boards or regulators, whereby they promote their bureaucratic self-interest over the interest of their ‘principals’, the shareholders or governments which have appointed them to carry out a particular public function.

These are powerful explanatory theories, but in the political science of public policy they are often presented as competing theories, rather than complementary theories. The consequence is that other theories are introduced in order to explain, in particular, the dynamics of the political process and the development of public policy. Such theories include abstract theories, such as the ‘power of ideas’, and institutionist theories, which give a role to organisations and processes in shaping outcomes and attitudes (for example, the academic field of new institutional economics). However, when these theories are considered in relation to the better regulation debate, we see the potential for a synthesis, which brings together all of the theories into a unified structure which is dynamic, both in explanation and in promoting and sustaining a tendency towards efficient and effective public policy.

Where public interest theories, which are driven by the power of ideas, are explicitly associated with institutionist theories which, in this case, emphasise the place of central, coordinating and scrutinising organisations as the guardians of codified and institutionalised principles and processes of better government and regulation, then this alliance can be seen to promote better outcomes from the negotiations between interest groups, and to undermine, because of the discipline of effective accountability, private interest outcomes. The dynamic is a tendency towards public interest outcomes because the public interest norms help shape attitudes to the negotiations. In this way public interest theory ceases to be an abstract ideal which can explain nothing to an essential component of a unified public policy theory which can explain the dynamics and path of public policy towards its desired goals.

**Figure 1** illustrates this conclusion, showing the strong and necessary association between public interest aims and embedded better government principles and processes.

**Figure 1: A unification of public policy theories**



**Coherence**

So what does this integrated theory mean in practice? Clear identification of the public risk problem, within a coherent framework of analysis, comes first. Such unbundling sets the foundation stone for clarity of purpose, political engagement and accountability (and effective accountability underpins the sustainability of effective regulation). Second comes the codification and institutionalisation of better government principles and processes. Together these provide the analytical and procedural framework within which decision making is guided towards better, and hopefully the best, decisions, including the necessary judgements on trade-offs.

The key elements of the analysis and the recommendations are set out below, starting with ideas of public and private risks, and the relationship between them. In one sense, addressing ‘public risks’ underpins a general conception of government and the regulatory state, along with articulation of the criteria for judging whether something is a public risk, warranting government action. Consequentially we refer here to the idea of the ‘public risk’ state.

The conclusions and recommendations build, of course, on much good practice in the better regulation and control of public risk which has already been established, and our respondents’ overall view was that governments and regulators are in general seeking to do the right thing, but that improvements can still be made. For example, the Health and Safety Executive has developed an extensive methodology for risk-based regulation in ‘Reducing Risk, Protecting People’, and invokes the precautionary principle where the consequences of certain outcomes are considered intolerable. The HSE promotes self-regulation by requiring employers to take responsibility for avoiding risks in the workplace, based around the requirement for a safety case, but a cost-benefit test is meant to be applied such that actions reflect ‘best available technology not entailing excessive cost’ (BATNEEC), or that the risk is ‘as low as reasonably practicable’ (ALARP). Nevertheless, the legislation allows standards and requirements to be introduced by regulators where the cost is ‘not grossly disproportionate’. This allows valuation discretion for regulators to reflect the distribution of the incidence of costs and benefits, or ‘societal concerns’ in particular circumstances (eg, avoiding rail crashes). The

Environment Agency has equally developed sophisticated methodologies to address flood risk and the investment necessary to mitigate and adapt to it. HM Treasury has also codified the economic, financial and social aspects of risk appraisal methodology for cost-benefit analysis in its ‘orange’ and ‘green’ books (The Green Book, 2003; Management of Risk – Principles and Concepts, 2004; and Managing Risks to the Public: Appraisal Guidance, 2005).

The National Audit Office has established a reputation for the scrutiny of risk-based regulation and its assessment through regulatory impact assessments (now Impact Assessments), and there are ‘co-ordinating’ institutions, such as the Better Regulation Commission, now superseded by the Risk and Regulation Advisory Council, which, as we have already noted, has started to address the issues of ‘public risk’, complemented by the co-ordinating role of the Better Regulation Executive (BRE) in policing the ‘better regulation’ agenda across government, and the procedural requirements for better decision making. The RRAC and BRE have been given greater apparent authority by the government decision to transfer better regulation from the Cabinet Office to the newly formed Department for Business, Enterprise and Regulatory Reform.

### *Areas of Concern*

However, notwithstanding the encouraging development of the ‘better regulation’ agenda to date, there are concerns, and improvements can be made. The announcement by the prime minister at the RRAC’s launch indicated that it would examine ‘public risks’, and whether the right decisions are being taken. Two questions seem pertinent. First, are there pressures, either from the public or from the state (ministers or officials), to take on more private risks than they should? Secondly, even if a public risk is properly assumed, is it being managed well, either in terms of the transactions cost burden being imposed, in managing the introduction of the policy effectively in the face of sectional, or general public, resistance (even where the policy is well demonstrated to be in the public interest), or because the policy is not being ‘optimised’ in some sense, for example, by setting standards broadly where the incremental costs and benefits are matched? In short, are there pressures on both sides for risk-averseness; the public looking either to avoid managing their private risks, or expecting government to reduce public risks too far, irrespective of the costs, and do ministers respond because they are risk-averse to any outcome which suggests that they might not have protected the public sufficiently, or because they are driven to make policy announcements for short term political reasons (which either fall short of, or exceed, the requirements of an ideal policy)?

Two findings from the interviews in particular illustrate the need for further development. First, the suggestion that independent regulators have shown a greater commitment to implementing the principles and processes for better regulation, in part because the accountability of the process helps underpin their legitimacy, given they are normally ‘technocratic’ appointees. This commitment needs to be extended more effectively across ministerial policy development and decision making. Secondly, the transparency of the lines of argument for decision making, as exhibited in impact assessments, and the methodology of assessment in its various components, are seen, too often, to be poor. For example, valuations are not always properly unbundled in order to distinguish between situations where regulators impose their judgements on risks (ostensibly objectively) rather than take the public perception of the risk. In addition, these cases are often asymmetrically applied, depending on whether the regulator sees the public perception of the risk as greater or less than the so-called objective risk. There is also confusion as to whether a disputed decision

reflects a disagreement about the likelihood of a harmful event, or whether other aspects of societal concern have been added in to the valuation, over and above a standard valuation of life. Areas of concern include:

- Whether cost-benefit analysis incorporates all relevant information, both qualitative and quantitative, and is consistently applied in terms of judgements on weightings and trade-offs;
- Whether standards are set at a level which is intended to broadly equate the incremental benefits of the standard at that level to the incremental costs of having the standard at that level;
- Whether uncertainty of outcome is properly matched with the precautionary principle to guide decision making, particularly where some outcomes are considered unacceptable;
- Whether the existing principles of good regulation are sufficient to encompass the policy making process, such that ‘missing principles’ need to be added in to constrain regulatory and political risk more effectively;
- Whether policy options are specified properly, and cover the full range of comparative options, including do-nothing (compared to simply ‘retro-fitting’ the assessment to the already determined policy);
- Whether the technocratic emphasis of impact assessments is a barrier to effective presentation, coherence and communication, such that a ‘lines of argument’ drafting discipline for policy documents needs to be introduced (or, as some suggest, reintroduced);
- Whether there is sufficient separation in the development and consultation process between the methodology of assessment to be used and agreed, and the acquisition of stakeholder views on the specific decision in question;
- Whether current terminology, such as ‘partial impact assessment’, send such misleading signals that there needs to be a new brand, based around ‘decision analysis’;
- Whether sound policies in principle are frustrated by the bureaucracy associated with their implementation.

## **Public and Private Risk**

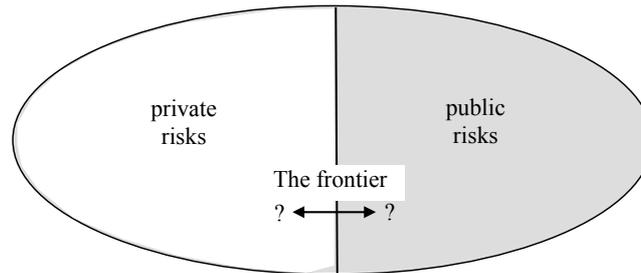
Countries and citizens face a plethora of risks (ie, uncertain outcomes), and governments and individuals may act to manage those risks, but sometimes not at all, and sometimes ineffectively. Whether they act will depend on their perception of the problem (albeit that those perceptions might be judged by some to be ill-informed, and lack ‘objectivity’). Whether governments or individuals should act might depend on a judgement about which of them is best placed to manage the particular risk effectively, and for this reason it might be best not to see public and private risks as intrinsically separate things, with a clear frontier between them. An alternative approach would see citizens’ private risks being ‘enclosed’ by potential or actual government action to address public risks (ie, those risks which government seeks to manage on behalf of the citizen), and thereby setting an ‘efficient and effective’ context for the management of the remaining ‘private’ risk. We suggest that the latter conception is the more useful, and realistic, conception.

**Figure 2** illustrates these two ideas of public and private risk, and it is important to be clear that this representation is only concerned with the interface between those elements of the set of all risks which are judged, according to various criteria (set out in the following section), to be ‘public risks’ to be taken on and managed by government, and the remaining risks which are private risks. There is no implication here that in dividing responsibility for addressing different risks that the private risk element equates with ‘society’, given that ideas

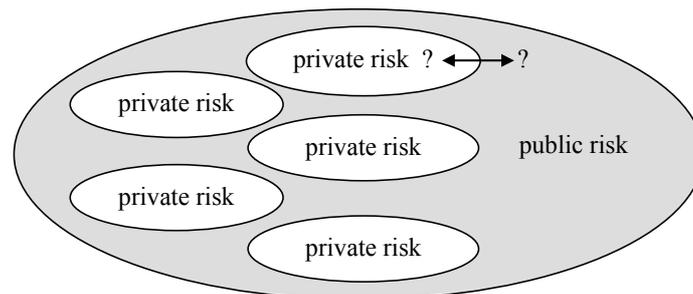
of state and society are important in other political science discourses. In this analysis it is the mutually beneficial outcome of having the appropriate division of responsibility for managing risks between the state and individuals which is the object of attention, and where individual and community action together can be seen as the basis for a good ‘society’ overall. Enclosure is therefore an operational, not a judgemental, term in this sense, and should not be seen as in conflict with liberal values.

**Figure 2: The interface between public and private risks - where should the frontier be?**

~ **One idea: a frontier separating discrete domains** ~



~ **Another idea: ‘enclosure’ of private risks by public risk state intervention** ~



***The Criteria for Adopting a ‘Public Risk’***

The activities of the regulatory state (reflected in the accumulated state ‘infrastructure’) can be understood to be a combination of: **actions proposed in the public interest of citizens**, founded in coherent analysis, and supported by the express wish of the people for such collective interest actions by politicians acting as the people’s representatives (the ‘public interest’ theory) **plus other influences** which affect the delivery of government activities in practice, eg, capture by private interests and trading-off in negotiation between stakeholder interests (including public opinion pressures) which may result, due to the distribution of power between them, in something less than an ‘idealised’ outcome in the public interest. The latter theories often dominate discussion but, nevertheless, most policy announcements purport to reflect a public interest ethos and rationale, and codification and institutionalisation of good governance principles and practices in the regulatory state can support the tendency towards public interest outcomes, creating ‘exposure’ which undermines capture outcomes (thus effective accountability underpins effective regulation).

Within this general framing of the regulatory state, the criteria for government actions to address particular risks (ie, public risks) have often been analysed in terms of constraining the risk of, and redressing where necessary, conduct and market failures (and where these ideas include the positive, promotional and facilitating roles of the state to overcome the risk of situations where too little of a good thing would otherwise be provided – lest the reference to

‘failure’ be seen as a too negative a conception of the state’s role). **Table 1** shows a typical list of criteria in the context of public risk analysis.

**Table 1: Criteria for adopting public risks**

<p><b>Public risk analysis</b></p> <ul style="list-style-type: none"> <li>– analysis is required to see which ‘public risks’ the government should take on and manage, as opposed to ‘private risks’ which individuals manage</li> </ul> <p>The criteria for assuming public risks includes:</p> <ul style="list-style-type: none"> <li>– <b>public goods arising from missing markets:</b> including correcting asymmetry of information and providing the regulatory ‘infrastructure’ (institutions and processes)</li> <li>– <b>public protection:</b> setting standards, including occupational safety</li> <li>– <b>correcting externalities:</b> effects on third parties which need to be internalised into private costs and market prices</li> <li>– <b>abuse of monopoly power and anti-competitive practice</b></li> <li>– <b>inequitable distributional outcomes</b></li> </ul>
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***The ‘Public Risk’ State***

Such an analysis, which combines the idea of the state addressing public risks with the traditional criteria for government action based on conduct and market failures, yields the conception of the ‘public risk’ state. Traditional state provision of defence and national health services would, for example, fit into this framework of analysis (eg, by reducing the risk of foreign intervention, or addressing the risks of inequity, and to public health, by guaranteeing access to medical care free at the point of need). The risk-based conception would also be a way of integrating the proliferation of terms which have been used to characterise the state in the past (including such terms as the welfare state; the keynesian state; the social market state; the liberal market state; the regulatory state; the positive state; and the minimalist or laissez-faire state). It suggests too that the ambit of the public risk state can be properly covered by the term ‘regulatory governance’, given that good regulation includes the promotion of self-regulation of risks with strategic public oversight or facilitation. The question then is to define those ‘public risks’ which the state should manage, and how best it should do it.

It can be seen from the list in table 1 that most private risks could be seen to have a potential public risk context (even where the private risk decision continues to be exercised). Hence an obesity issue (the private risk of being overweight) could occasion public information campaigns to improve knowledge, or intervention to either protect children or to take account of the diversion of scarce healthcare resources if obesity causes disease or premature death, compared with not being obese. Private risk taking may therefore be ‘enclosed’ (as illustrated in figure 2) within a framework of public risk driven actions which are intended to mitigate the consequences of those private risk decisions (eg, yachtsmen required to have navigation certificates before they can sail, as with mandatory motorcycle helmets, a statutory requirement which leaves the core private risk, the freedom to motorcycle, unaffected).

Whilst the private risk space remains (for practical regulatory reasons, as well as in principle, given private risk taking is a fundamental tenet of the ‘free society’), it can be said that all risks for citizens attract, in one sense or another, the actual or potential attentions of the regulatory state. With this idea of ‘enclosure’, the key question then becomes how, in each case, the state rationalises its approach to a public risk, and whether it is cost-effective, in its

widest sense. The instruments available include direct provision, guaranteeing provision but with contracting out or privatisation (public services, privately provided), regulating by setting standards, prohibitions or establishing incentives (including provision of the regulatory infrastructure), facilitating by way of information provision or requirements, and ‘insuring’ with safety nets and services.

### **Unbundling Risk and Valuation**

The effective assessment of public risk, and the comparison of the costs and benefits of managing, or avoiding, particular risks is a key element of good decision making, and hence good governance. In this it is important to emphasise that the key concern is the uncertainty of outcome in each case. Some confusion can result from the technical debate about risk versus uncertainty, where risk is defined as a distribution of uncertain outcomes to which a more or less reliable ‘probability distribution’ can be attached, but this is less about the core policy characteristic of uncertain outcomes, than about there being additional information in some cases which can help inform policy making with respect to uncertain outcomes. The fundamental issue may be whether the ‘precautionary’ principle should be invoked (a key consideration for example in the HSE’s hierarchy of tolerable and intolerable risk).

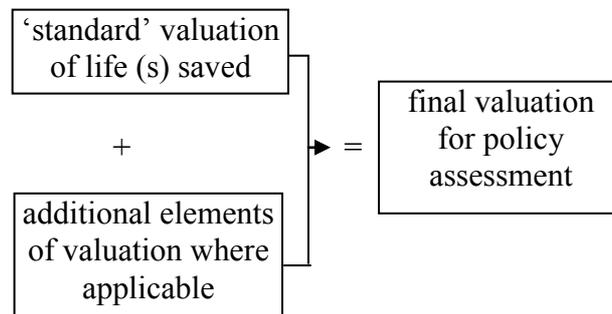
The assessment of risk involves unbundling various components, given risk analysis is intended to be part of the overall decision analysis, and which involves comparing the costs and benefits of the decision and the various options available to address the problem. The first element is to unbundle the risk of the ‘harmful’ event (an uncertain outcome) from the ‘valuation’ (or opportunity cost) of that harmful event. The second element is to describe the nature of the harmful event in terms of its uncertainty or probability of its outcome. Where there is evidence for a ‘soundly based’ probability distribution of outcomes, then this information can be used to develop ‘expected values’ for the ‘average’ outcome; information which can be utilised in making a cost-benefit decision.

Key issues arise in respect of each of these separate components however. With respect to valuation, we have to ask whose valuation is relevant to the government decision - the disinterested - or ‘scientific’ observer’s opinion, or the perceptual valuation of interested stakeholders (whether an objective assessment or not). There is also the question of whether there is neutrality with respect to the distribution of the costs and benefits (eg, a large range of small savings to consumers at the expense of one worker’s death). Finally, there is a question of decomposing the various elements of valuing a particular harmful event (eg, a rail crash). With respect to risk and uncertainty, most assessed probability distributions will have a range of uncertainty around them, and if the event is, in effect, one-off, then account has to be taken of situations where some outcomes are simply unacceptable. In this case, the precautionary principle applies (you gamble on what you can afford to lose but insure (or act against) what you cannot).

**Table 2** illustrates unbundling of the valuation of risk using the example of possible components for the valuation of avoiding rail crashes. The example has been chosen because there is an on-going debate as to why the value of lives saved in the cost-benefit analysis of rail safety is typically greater than that used in evaluating road safety improvements. The example is simply to show that comparative reasons for different valuations can be adduced, and that the reasoning can, and should, be unbundled.

**Table 2: Unbundling valuations in decision analysis**

- **Separating standard valuation** from other valuation elements



- **Possible elements for incremental 'societal' concern or distributional weighting valuation** (eg, in relation to rail crashes)

<p><b>public empathises with rail crash victims</b></p> <ul style="list-style-type: none"> <li>- passengers have no control over the risk</li> <li>- a public service is perceived as having particular obligations for safe provision</li> <li>- the imagery is more focused (less often, therefore less familiar), and more evocative (eg, pictures of cars left in car parks at destination stations, owned by crash victims)</li> </ul> <p><b>equity considerations, where not grossly 'disproportionate'</b></p> <ul style="list-style-type: none"> <li>- a worker's death simply means 1m consumers would save £2 each on their purchases</li> </ul>
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- **The consequence** is an expectation for (or willingness to bear) higher (ie, incremental) expenditure to avoid particular risks.

**An Illustration**

The following **Table 3** is a simple illustrative example of safety of pedestrians on pavements, given the hazard of a kerb. The first step is to analyse the **'do-nothing' policy**, and then compare it with a comprehensive range of **'do-something options'** (eg, warning notices, railings, rubberised pavements, flush kerbs with road) to find the best, ie, most cost-effective, option, if any, unless a constraint is imposed that a particular option must be implemented, when the analysis might be confined to identifying the least cost of implementing the option. **Note** that the do-something options must take account of any other consequential hazards or behavioural changes that the particular option introduces or avoids compared with the do-nothing option (eg, railings are a hazard as they might attract children to climb on them with the new risks that go with that). The probability of a harmful event might have been based in this example on survey evidence, which found that in 1% of cases pedestrians tripped up the kerb. The uncertainty as to whether this rate of incidence will continue reliably into the future has to be considered. Lines 7 and 8 simply illustrate that additional valuation weightings can be included as appropriate, but should be explicitly identified.

**Table 3: Valuing the ‘do-nothing’ hazard to pedestrians**

<b>Hazard</b>	<b>A kerb (potential to cause harm)</b>
<b>1</b> Intensity of exposure to harm	100,000 pedestrians pa cross the kerb
<b>2</b> Risk of harm event	Tripping on kerb: 1% or .01
<b>3</b> Number of harmful events	<b>1 x 2 = 1000</b> per year
<b>4</b> Class of outcome risk	Stub toe (0.8), sprain (.15), break bone (.049), death (.001)
<b>5</b> Number in each class	<b>3 x 4</b> in each case: 800,150, 49, 1: total 1000 per year
<b>6</b> Standard valuation	for each class respectively: £1, £20, £500, £1m
<b>7</b> Societal concern weighting	To be determined (eg, where multiple fatalities are possible)
<b>8</b> Distributional weighting	To be determined (eg, high incidence on old and children)
<b>9</b> Total valuation by outcome	<b>6 + 7 + 8</b> as determined for each class
<b>10</b> Expected cost by outcome	<b>5 x 9 =</b> £800, £3000, £24500, £1m
<b>11</b> Total expected value pa	<b>£1,028,300 cost if do-nothing</b>

The total cost of do-nothing can then be compared with the do-something options, which may save harmful outcomes but at the cost of investment and resources to avoid them (involving discounting to present values where a stream of benefits is to be compared with, say, a one off investment cost). The option with the highest incremental gain would, other things being equal, be chosen.

Even in an apparently simple illustration such as this, the complexities and issues of risk and uncertainty, the specification of the on-going behavioural responses (‘state of the world’ outcomes) with respect to both the do-nothing and the do-something (so that we can properly compare like with like), and the potential bases for valuation are clear. It is also interesting to note that if the elderly are particularly vulnerable in this case, it raises questions about the applicability of the ‘consumption-based’ approach to valuation. These issues are magnified of course when more complex and dangerous situations are to be evaluated, such as nuclear power or climate change effects. In the former, similar types of analysis of probabilities and expected values are undertaken, but the numbers become so small, and the HSE takes such a precautionary view, both of risk and procedure, that it becomes a philosophical question as to whether ministers are in effect saying that the nuclear policy is, in essence, risk free (although having to admit that in principle there is a risk), because the policy simply could not go ahead if the minister had to stand up and say that there is a plausible risk. Our respondents told us that if the risk is unacceptable, then the pressure is to ban it or engineer it out to the point of being risk free in substance. Climate change policy is a counter example of the next order since it represents a global, rather than a more localised, risk, and the benefits of bearing the current ‘insurance’ costs of mitigation are based in a disputed, or often disregarded, future. This creates a situation in which government actions with respect to the public risk of climate change can be less than required.

Unbundling of decision making in relation to public risks therefore needs a framework of principles and processes which force a clear exemplification of the issues which inform the judgement and the decisions. This takes us to the better regulation principles.

### **Better Regulation Principles - A More Complete Picture**

The UK’s five ‘principles of good regulation’, transparency, proportionality, targeting, consistency and accountability, were first published by the Better Regulation Task Force (BRTF) in 1997/1998. The BRTF was taken over by the Better Regulation Commission in 2006, and the implementation of the better regulation agenda has been the responsibility of the Better Regulation Executive (formerly the Regulatory Impact Unit until 2006), now complemented by the new Risk and Regulation Advisory Council, starting in 2008. The five

principles of good regulation are well known, and similar manifestations are found in many countries. The problem is that these principles are, in effect, implementation process principles, not principles wholly related to the policy objective - the problem to be addressed.

The question arises, therefore, as to whether ineffective risk-based policy is caused in part because the principles themselves are incomplete. The missing principles could include **coherence, completeness, objectivity and credible commitment**; principles which relate fundamentally to the proper specification of the objectives of policy and the problems to be addressed. Such principles could be the foundation stones for securing legitimacy (one of the principles of good regulation cited by the OECD). Such principles could complement the existing five principles, which can be grouped into **implementation issues** (proportionality, targeting and consistency) and **process disciplines** (accountability and transparency).

### *Why Codify Principles?*

Some will reasonably question the need for a formal recognition (codification) of general principles in the policy process, and this would be in line with the tradition of 'tolerant pragmatism' which has characterised much of the UK's constitutional and government policy making practice over the years; a practice which can offer significant advantages in terms of innovation, adaptability and policy development. Codification, and its implicit constraints (whether codified in guidance, codes of practice or statute), might then be seen as a philosophy too 'continental' in tone, with its reference to models, decision making frameworks, and aspirational goals. The cost of tolerant pragmatism, however, can be a lack of discipline in policy making, which can result in bad decisions, and bad decisions which may endure.

The question, therefore, is whether some further formal codification and institutionalisation of good government principles and processes, drawing on the lessons of institutionist theory, would provide a beneficial discipline which promotes better policy development and decisions? Institutionist theory highlights the power of institutions and processes to shape outcomes, and codification is a necessary condition, when allied with process and institutional developments, for the cultural imperatives of a better regulation attitude to be inculcated and take effect. Such codification is not proposed to replace flexibility by rigidity, or to impose unnecessary bureaucracy on the efficient workings of regulators and policy makers. Its purpose is simply to provide a 'guiding hand' to policy making, and to provide an evaluative framework of benchmarks and aspirations which both inform decision making and provide for better means of accountability.

Even if this is accepted, from where are the principles derived? They are deduced, and self-evident (which minister or regulator would say that their decisions were intended to lack objectivity, be incoherent, incomplete and without commitment?). But that does not imply they are valueless; the point is that they provide a discipline and a goal. Exactly the same point on 'motherhood statements' could have been made about the current five principles of good regulation, but they have been introduced and institutionalised into practice. However, their introduction was still noted as a hostage to fortune by some regulatory commentators, and we have to be mindful therefore of the suggestion that resistance could have been self-serving if regulators wished to avoid too many benchmarks which strengthen the ability to hold them to account. Nevertheless, the battle for codification of principles was won when the government started to introduce the five principles of good regulation into the statutory duties of regulators (see, for example, the Communications Act 2003 in relation to Ofcom). The next step is to entrench the general principles of good government and policy making.

### ***Credible Commitment***

The principle of credible commitment is interesting because it has already been applied over a long period to the regulatory framework for the privatised utilities and network industries (water, energy, transport and communications). The government recognised that investor and public confidence in the privatised industries would be secured, and sustained in the long term, through arrangements which distanced ministers from day to day decisions, and constrained the range of their interventions, thereby reducing political risk. The policy founded the statutorily independent economic regulators (a key feature of the general unbundling of the regulatory state), but the regulators' activities were themselves equally circumscribed by statute in order to reduce regulatory risk.

Clashes and controversies have occurred between ministers and regulators (notably the cost of quality debate in water in the early 1990s, and over ministerial discretion and power in rail in the early 2000s), but they have been of the learning variety, and the core system has been maintained, developed and reinforced. Yet credible commitment (and the other missing principles) is not an entrenched principle for policy making. Climate change policy is probably the key policy example where inadequate attention to these principles has led to an uncertain, and incoherent, path of policy development. The entrenchment (or codification) of the missing principles is therefore necessary, and the question arises as to whether there are still opportunities to better manage political and regulatory risk through transferring ministerial decision making to independent regulators. The answer to this may depend in part on the degree to which the decisions can be seen to be fundamentally technocratic ones, whether the areas of judgement involved have a strong consensus framework, or where evidence has shown that ministerial decisions are routinely characterised by an excessive degree of political and regulatory risk, which results in policy degradation. An encouraging recent example has been the government's decision to establish an independent Climate Change Committee (CCC).

An overall set of 'good government' principles would also better reflect the general conception of the objectives of government itself, being sustainable development, as set out in the UK government's five principles of sustainable development, which are:

- A sound economy
- Living within environmental limits
- A fair and just society
- Using sound science wisely
- Promoting good governance.

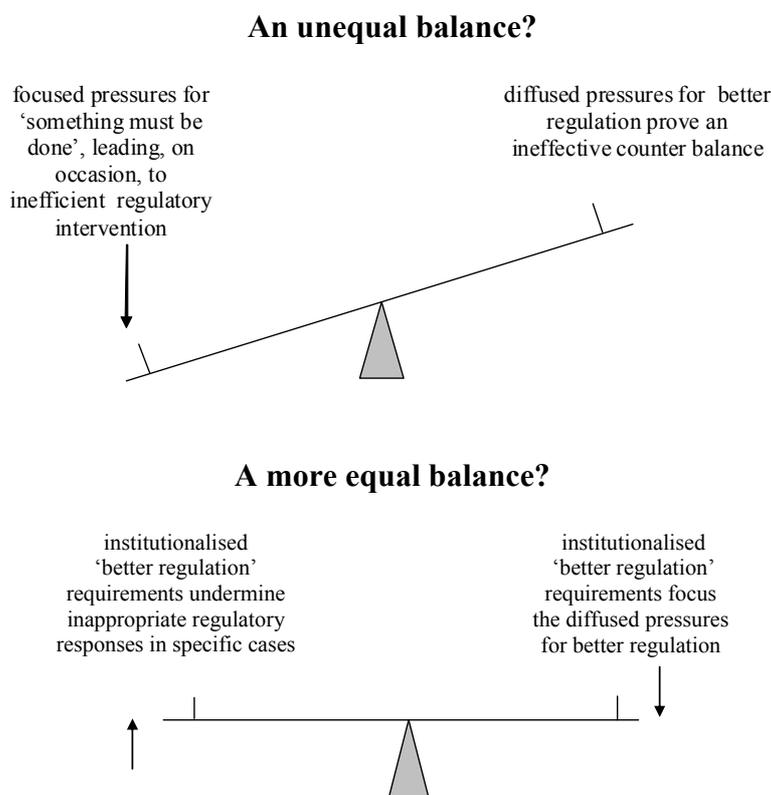
This assertion might seem surprising, and there may be a feeling that there are other objectives of government, but as with the all embracing concept of public risk, it can perhaps be seen that, in its most general sense, a government's overall aim from a public interest perspective has to be the sustainable development of the community which has empowered it? This objective would encompass governments' traditional core activities as means to achieve these ends: defence and law and order. Other outcomes might be explained, but they are not to be seen as the long term goal. The five principles of sustainable development can therefore be seen to span the full set of good government principles, relating in part to the objectives of policy (the first three), and in part to the disciplines that governments place on themselves to ensure good decision making (the last two). **Table 4** sets out a more complete picture of the principles necessary to achieve better decision making.

**Table 4: Better Regulation Principles ~ A more complete picture**

Functions	Principles
<b>Policy principles</b> - Identifying the problem and the policy making context - Clarity of purpose, supporting public interest outcomes - The ‘missing’ principles of good government - The principles have operational significance	<ul style="list-style-type: none"> <li>• objectivity</li> <li>• coherence</li> <li>• completeness</li> <li>• credible commitment</li> </ul>
<b>Implementation principles</b> - Addressing the problem cost-effectively	<ul style="list-style-type: none"> <li>• proportionality</li> <li>• targeting</li> <li>• consistency</li> </ul>
<b>Governance principles</b> - Effective accountability underpins effective regulation	<ul style="list-style-type: none"> <li>• transparency</li> <li>• accountability</li> </ul>

Principles need to be codified into practice if they are to be effective, and the reason is that the intention for better government and regulation is often a diffused desire, whereas the pressures for action, which may, on occasion induce poor decision making, is often sharply focused. **Figure 3** illustrates the problem and how codification and institutionalisation of principles and practice might redress the balance, and reduce political and regulatory risk.

**Figure 3: Achieving balance through ‘codification and institutionalisation’ of better regulation principles and processes**



***Policy Consequences***

The consequences of full codification and institutionalisation are immediate in terms of the due process of decision making, and **Table 5** illustrates the key application issues arising

from the principles. Together the principles provide a foundation for effective legitimacy, and the application issues add up to a sophisticated process of decision making; a sophisticated process which is achievable because of codification and institutionalisation of principles and processes of good government.

**Table 5: The policy implications of codified principles of good regulation**

<b>Principles</b>	<b>Application issues</b>
<ul style="list-style-type: none"> <li>• <b>objectivity</b></li> <li>• <b>coherence</b></li> <li>• <b>completeness</b> →</li> <li>• <b>credible commitment</b></li> </ul>	<ul style="list-style-type: none"> <li>• public risk analysis</li> <li>• the polluter pays principle and equity</li> <li>• the precautionary principle and uncertainty</li> <li>• policy combinations and ordering               <ul style="list-style-type: none"> <li>- core versus complementary policies</li> <li>- ordering of policies and the comparative baseline</li> <li>- unbundling ‘allied’ policies</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>proportionality</b></li> <li>• <b>targeting</b> →</li> <li>• <b>consistency</b></li> </ul>	<ul style="list-style-type: none"> <li>• the cost-benefit test</li> <li>• quantitative and qualitative information to be included</li> <li>• incremental analysis of costs and benefits in standard setting</li> <li>• specifying correctly the do-nothing and do-something options</li> <li>• a complete range of options for comparison</li> <li>• promoting self-regulation with strategic oversight</li> </ul>
<ul style="list-style-type: none"> <li>• <b>transparency</b> →</li> <li>• <b>accountability</b></li> </ul>	<ul style="list-style-type: none"> <li>• giving reasons for decisions</li> <li>• effective scrutiny</li> <li>• the possibility of independent review</li> </ul>

The polluter pays principle is founded in equity and economic rationality, and is a complement to the idea of cost-reflective prices underpinning effective liberal market economies. The principle also has an immediate relevance to policy formulation in that subsidies which simply aim to correct for otherwise non-cost reflective prices in associated sectors may, of themselves, introduce another problem, that of too much overall demand. In this sense, subsidising public transport to tackle, indirectly, the externality of car pollution may be the wrong choice of instrument. Hence the need for guiding principles which have been properly codified and institutionalised.

The precautionary principle is brought into effect to guide decision making in relation to uncertain outcomes, and particularly where some outcomes are judged to be unacceptable. In this case, ‘act (incurring preventative expenditure) and learn’ may be preferable to ‘learn then act’ (if it is then still possible to do so effectively). Climate change policy is probably the classic example where public risk analysis has not been properly implemented, the core policy requirement not properly identified (an effective international mechanism for reliably constraining CO<sub>2</sub>eq emissions, compared to a proliferation of necessary, but essentially complementary, national policies), the ordering of policies is inadequate (given the need to for the necessary aggregate constraint to be reflected in changing relative prices for carbon embedded goods and services), and with insufficient unbundling of the policy from allied policy areas, to be followed by ‘joint’ analysis. The latter is well illustrated by the debacle over bio-fuel policy, when a simple joint analysis of food security policy and climate change policy would have quickly identified that substituting an ‘intensive’ energy extraction system (oil) with an ‘extensive’ land use system (bio-fuels) would, because of the opportunity cost of the non-marginal land use changes involved, have helped create a food policy crisis. This is not the law of unintended consequences, but the result of inadequate analysis of policy, the

consequences of which were eminently foreseeable, and which should have been foreseen. **Table 6** sets out some generic consequences of the general principles:

**Table 6: Application context: policy principles**

<p><b>The polluter pays principle</b></p> <ul style="list-style-type: none"><li>– implies cost-reflective prices for consumption of polluting goods and services rather than subsidies for alternatives, which promotes too much overall demand.</li></ul> <p><b>The precautionary principle and uncertainty</b></p> <ul style="list-style-type: none"><li>– gamble what you can afford to lose, and insure against that which you cannot.</li></ul> <p><b>Policy combinations and ordering</b></p> <ul style="list-style-type: none"><li>– consider redistributive corrections after externalities have been internalised into cost-reflective prices</li><li>– identify each policy explicitly with the core market or conduct failure being addressed. This separates core from complementary policies addressing associated market failures (eg, R &amp; D support), and unbundles allied policies (eg, energy security from climate change policy), thereby allowing joint effects to be analysed effectively.</li></ul>
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## **Better Process**

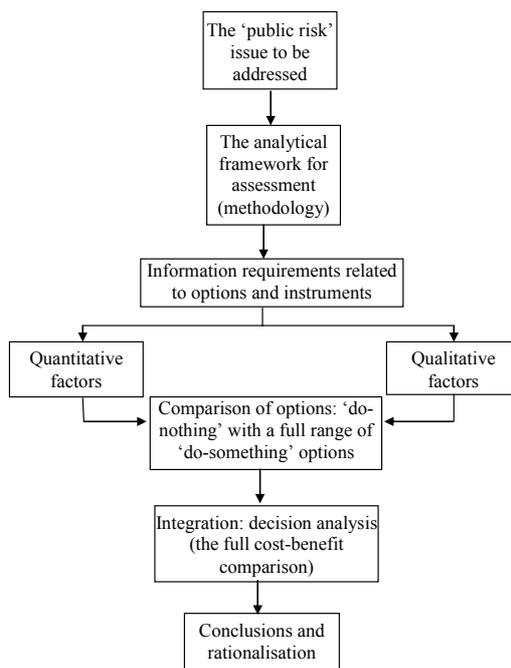
The institutionalisation of better decision making suffers, to a significant degree, from the legacy of the past, whether in relation to the ‘silos’ of established departmental practice, inappropriate (or misunderstood) terminology, and insufficient attention to the integrated nature of what has, in practice, to be a discretely packaged process. Our concerns relate specifically to the need to operationalise the missing principles of good regulation into the processes of good governance. This covers the specification of the cost-benefit test (its completeness), the objectivity and coherence of the analytical framework from problem identification through to final decision, and to the credible commitment of parliament to scrutinise effectively the decision making process. Respondents have argued that there is no pressing need for institutional or statutory reform. The infrastructure for better regulation is seen to be in place, but needs to be operated more effectively, and this requires some ‘structural’ reform with further codification and institutionalisation of better regulation principles and practices. There may be a need for parliament, with the NAO, to consider how their scrutiny of public risk decision making could be improved through adopting the recommendations which follow. This may require a greater engagement by the NAO in policy analysis, on behalf of parliament, and to allow parliament to operate more effectively.

The areas of concern, and the possible remedies, include:

### ***Misunderstanding:***

as to whether the technique of cost-benefit analysis relates to only quantifiable, monetarised analysis, or a broader conception of all costs and benefits affected by a decision. **Figure 4** shows how a more complete picture might be viewed. The point is that cost-benefit decisions should be complete, and made on ‘information’, and lines of reasoning, some of which might be characterised by numbers, and some by prose. The problem is when there is ‘bias’ in favour only of quantification by numbers. The proposed integrated decision assessment methodology (DAM) would be expected to show that such bias was not the case.

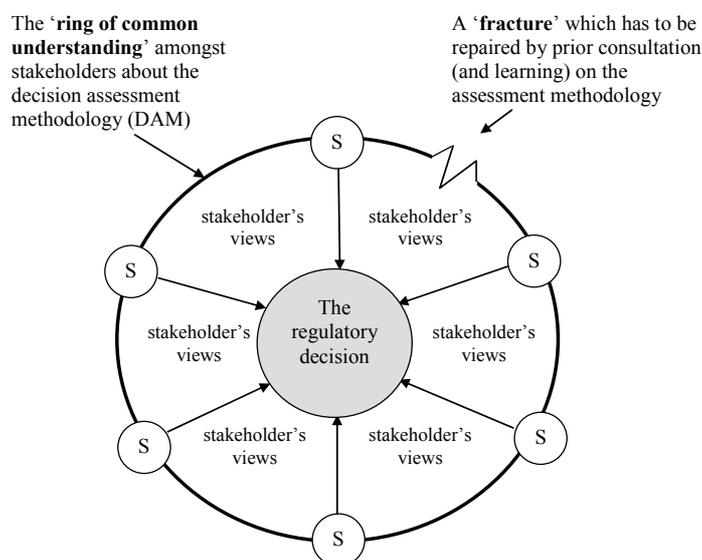
**Figure 4: Integrated decision assessment methodology (DAM)**



***Inadequate Separation:***

of the process of engaging on the methodology of assessment (the DAM) from the process of effective consultation on the specific issues of the decision, given a methodological framework for assessment and decision. Where all interested parties have ‘engaged’ with the methodology of assessment and decision making first, the framework will have been established for a more coherent debate on the particular decision in question, and on the opportunities for reconciling divergent views. The ‘reasonable’ decision is then more likely to be found and accepted, and governments may find it easier to manage the introduction of public interest policies which otherwise might face considerable resistance (eg, as currently with climate change policy). **Figure 5** illustrates these two aspects.

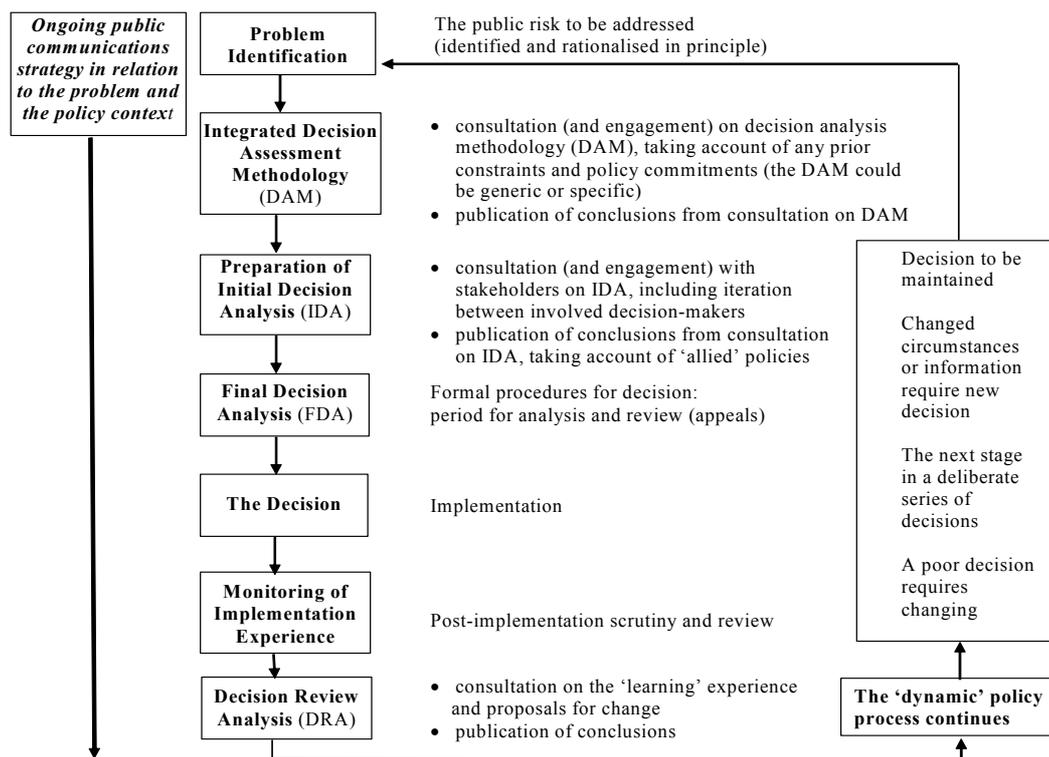
**Figure 5: Aiming for prior consensus on the decision assessment methodology (DAM) ~ followed by consultation on specific stakeholder views and interests ~ (S = stakeholders)**



**An Overly Technocratic View:**

of impact assessment (formerly Regulatory Impact Assessment) which appears to have most relevance to ‘independent economic regulators’ in application, but fails to resonate with ministerial perceptions of their role and responsibilities. Respondents confirmed that regulators recognise the need for formality of analysis, but resist the tendency to over quantification, and so this issue could be addressed in part, for government as a whole (regulators and ministers), by adopting a new, and more natural terminology, based around ‘decision analysis’ and the foundations for that decision making. **Figure 6** illustrates a decision making process where partial, initial and final impact assessments have been replaced by an integrated **Decision Assessment Methodology (DAM)**, an **Initial Decision Analysis (IDA)** and a **Final Decision Analysis (FDA)**, all focused on coherent ‘lines of reasoning’. After the final decision, this is followed up by a **Decision Review Analysis (DRA)**. The defining characteristic of the proposed decision analysis, and its associated decision making process, is therefore coherence, not standardisation, a strong attribute of current IA methodology, which can be restrictive and distorting. Coherence should equally well facilitate transparent comparisons and trade-offs, as standardised IA methodology is intended to achieve, but without its limitations. Decision analysis would incorporate existing IA techniques into a broader, more complete framework.

**Figure 6: The decision making process**  
 ~ discrete elements and contextual public education process



The diagram shows how the discrete stages throughout figure 6 are accompanied by an ongoing contextual communications strategy (which might, for example, include longer term campaigns to influence attitudes and expectations which are necessary to achieve support for more controversial policies or regulations, albeit that they are judged to be in the public interest), and figure 5 would map onto the first two stages of figure 6. It is important to note that the proposed ‘decision analysis’ does not represent a ‘policy making process’ (either generally or for any particular sector or organisation). It represents the generic sequential

elements which inform a good decision making process within a general, longer term process of policy making. The policy making process itself might be linear or non-linear, and this 'cyclical' element for policy making as a whole is shown in figure 6 by the return arrow reflecting the assessment of the specific decision and its on-going place in policy development, which may lead to new decisions in due course. Four categories for the on-going decision making process within policy development have been included for illustration, covering both retaining the existing decision and changing the decision for various reasons. The purpose of the formal process for each discrete decision making element in the policy process is therefore to institutionalise, and hence to underpin, the tendency, either immediately, or progressively towards, policy outcomes which are in the public interest.

### ***Illustrations***

The relevance of the above analysis is exhibited in different ways by different examples, but whichever example is chosen, it would appear that 'public risk' analysis, and 'good government' principles and processes, have direct, and complementary, relevance. The range of possibilities to select from is extremely large, and work by the BRTF, the BRC, and now the RRAC, as well as by the BRE, and the NAO, yield good case examples (notwithstanding examples also chosen by academics in journals and books). Our purpose here has been to establish a framework of analysis, but it is useful to highlight some comparative examples of the issues facing the 'public risk' state in its policy making and regulatory decisions. They demonstrate why judgement, based on coherent lines of argument to find the best options and policy mix, remains at the heart of many public risk decisions, and particularly in situations where 'public concern' is manifest. The key elements for policy making can be seen to be the treatment of uncertainty, the distinction between risk to oneself compared with risks to third parties, the choice of the right policy instrument to address the problem, the need to manage the process of policy introduction effectively, particularly with respect to developing attitude change (perhaps over many years), and balancing incremental costs against incremental benefits. Simplicity, continuity and understandability are also important criteria to bear in mind when designing regulatory and policy making systems in practice in order to reduce 'transactions costs'.

**Climate change:** establishing the precautionary principle as the basis for tackling an uncertain, but unacceptable, outcome;

**GM foods:** balancing the environmental and bio-diversity risks against the goal of alleviating poverty and hunger through greater agricultural productivity;

**Fluoridation of water supplies:** balancing avoidance of the private and public risks of the cost of bad teeth by prevention with the dangers of potential side-effects, whilst also rejecting the arguments of those who oppose mass medication in principle;

**Smoking and drink-driving:** prohibitions to avoid third party effects, plus an element of removing discretion to harm oneself, which raises issues about paternalism and the right to private liberty where harm is not being done to others. Motor cycle helmet requirements, obesity campaigns, media content regulations, and seat belt requirements raise similar issues, and fall on a continuum where the frontier between public and private risks is disputed.

**Cultural 'intangibles',** such as avoiding the destruction of a Norman church (or the ambiance of Stonehenge) by putting a road in a tunnel;

**Transactions costs** of policing monopoly practices, whereby the bureaucratic cost of regulation might outweigh the natural erosion of monopoly by competitive forces, if allowed time to be demonstrated;

**Standards,** such as drinking water or rail safety, where the balance between incremental cost and benefit may be a complicated, and sophisticated, line of argument.



## Conclusions

The research on risk and the regulatory state has taken place against a backdrop of established practice in risk-based regulation and policy making, accompanied by recent recommendations about the management of risk from the BRC (Risk, Responsibility and Regulation, 2006) and the House of Lords Select Committee on Economic Affairs (Government Policy on the Management of Risk, 2006). Our conclusions complement theirs, given their emphasis on the guiding principles of risk management, being: openness and transparency; involvement, proportionality and consistency, evidence (meaning, as we heard from our respondents, evidence-based policy, not policy-based evidence) and responsibility (allocation of responsibility for managing risks to those best placed to control them). For us, their attention to the balance of public regulation with personal freedoms and civil liberties is a core feature of the analysis of public and private risks, an analysis which we have attempted to formalise. Nevertheless, although definition may not be precise, the intention may be clear, and in this respect we disagree with one conclusion of the select committee that terms such as ALARP, gross disproportion and the precautionary principle should be “*more clearly defined or replaced with more specific and unambiguous requirements and concepts*” (p32, para 101). These are already well defined when associated with the general principles of good government and regulation discussed in this policy overview, and no policy maker should be in any doubt about the expectations that these terms bring to them when developing their policies and in making decisions.

Our recommendations focus specifically on institutionalisation and codification of principles and processes of good governance; recommendations which are founded in an integrated view of the political science of public policy formulation in the longer run. In this, institutionist theory provides a strong underpinning for our belief that this aspect of policy requires greater attention. A debate should therefore take place on the means by which the risk-based decision making of government could be improved through the effective codification and institutionalisation of principles and processes of better regulation in their comprehensive sense. The issues include:

**1. The ‘standard model’ of technocratic risk evaluation, based on elite (expert) decision making, with its emphasis on scientific quantification, is not sufficient. An integrated socio-political context to risk-based policy and decision making is required, and this emphasises case by case analysis, founded in clear principles and processes.**

**2. Placing ‘public risk’ analysis at the heart of the decision making process of government with regard to all of its activities, and therefore would be applied by independent regulators and ministers in their policy making.** In our analysis, the adoption of a risk as a ‘public risk’ by the state should not be presumed. It has to be argued for and justified, and if decision analysis is comprehensively applied as envisaged, then it will challenge many preconceptions and expectations, and provide a firm foundation for the full consideration of contentious issues, such as flood protection, obesity and smoking.

There should, for example, be no presumption that flooding is to be treated as a public risk, resulting in public expenditure on flood protection or alleviation. In some cases it will be justified (where the avoided damage is greater than the incurred investment cost in flood protection), but if not it would best be left as a private risk, to be managed in various ways. This could include spreading the risk by recourse to the private insurance market, and where the premiums would reflect the risk being assumed. Self-insurance is also an option. The cost of flooding risk is thereby reflected in both production and consumption decisions, and

incentives should be aligned in determining the supply and demand balance for house building in flood plains. This case is made more complicated, however, because, first, there is the question of whether the planning system is dysfunctional, and creates public expectations about the assumption of public risks because planning permission has been granted for building in known flood plains. The Environment Agency has on occasion advised local authorities not to grant planning permission because of the flood risk, and yet permission has been given. Were these balanced decisions by local planning authorities in the public interest, or are there misaligned incentives, whereby the local authorities receive the rate revenue on the new buildings but do not pay sufficient regard to what may be the consequential cost, flood protection expenditure, a cost which may be borne by others? The political expectation that flood protection will be approved, given the houses have been built, might result in expenditure which would otherwise have been unwarranted. Secondly, there is the question, politically, of whether ‘caveat emptor’ principles can be sustained when flood risk increases due to unanticipated, macroscopic changes, such as climate change.

Obesity has been identified as a problem which may exhibit some public risk element, but in deciding on the interface, and relationship, between public and private risk in relation to obesity, the idea of ‘contributory negligence’ might be relevant. Should medical care resulting from self-induced harm carry a financial penalty, in effect a contribution to the ‘incremental’ costs involved, or would this raise uncomfortable case by case problems which are best avoided, thereby treating the NHS as a community resource for all comers, however the condition was caused? The ban on smoking in public places is another example where the balance between individual freedom and the avoidance of external effects on third parties (passive smoking) might have been addressed through the mechanism of allowing ‘self-selection’. Where there is a significant amount of choice available (eg, pubs, clubs and restaurants), then one option is to allow licence self-selection (ie, declare whether you are a smoking or non-smoking establishment). Customers and staff can then choose whether that establishment is for them, the risk taken being a private risk in this context. It may be that such an option would be overridden by the public policy requirement to stop any such private risk taking. In any event, the reasoning should be clear, and the appropriate regulatory mechanism follows.

**3. The codification and institutionalisation of the missing principles of good government, which are necessary to support better policy and decision making - objectivity, coherence, completeness, and credible commitment - whether that be in guidance, a code of practice or statutory duties.**

**4. The development of the current impact assessment system into a more integrated form of ‘decision analysis’, which promotes transparency, good communication and effective engagement in consultation.** This would require the replacement of the too narrowly focused impact assessment approach (with its emphasis on the measurable) with a coherent, ‘unbundled’ line of argument approach.

Such an approach would take the reader through the reasoning for the decision, starting with identification of the problem, through the ‘unbiased’ methodology of assessment and transparency of trade-offs and judgemental weightings, to the rationale for the final decision. A new level of drafting skill, based on traditional ‘briefing’, and setting out the coherent lines of argument, would be required. Recent changes to the IA guidance issued by the BRE gives encouragement that this development is within reach. The missing principles of good government are the foundation of the approach, and it can be seen that coherence of argument

in each case is the defining characteristic, rather than comparability or consistency with previous decisions for its own sake. In this context, the RRAC's intention to focus on the importance of 'experiential learning' is particularly welcome.

**5. Reform of the procedural conventions of parliamentary scrutiny, such that the NAO is less constrained to provide the required policy evaluation which is necessary to support effective scrutiny by parliament and select committees of government decisions to address public risks.**

This suggestion may be seen to cut across established conventions that the NAO does not involve itself in policy analysis, only the effectiveness with which policy has been implemented. In part this convention was developed to protect the authority of government, democratically elected, over its policies, and, by extension, since parliament gave the necessary statutory authority, the authority of the parliamentary system itself. Unfortunately the convention sits less well with the scrutiny role of parliament over government policies, and particularly where there is a presumption in favour of good government principles and processes being applied. Parliament has to have the maturity and resources to question existing policies effectively, and to utilise, and police, the codified and institutionalised processes by which those policies can be effectively scrutinised. If parliament is willing to come of age in terms of the better regulation agenda, then so too must the offices of parliament, such as the NAO. The risk of such a constitutional development is not increased bureaucracy for decision-makers, but increased accountability, which can only assist them in their search for public interest outcomes.

**6. Ensuring that the 'voice' of the Better Regulation Executive is maintained, and properly resourced with the necessary expertise, in order to promote a 'whole of government' approach to the implementation of the better government, and hence the better regulation agenda.** This is particularly important in an 'unbundled' regulatory state, incorporating statutorily independent regulators.

**7. Consideration as to whether there are further areas in which independent regulation could be developed?** This might depend on the degree of consensus about the basis for risk-based decision making in the area, and the general opinion on ministerial performance.

One example might be education, where the recent restructuring of the education department and the Qualifications and Curriculum Authority, and the development of education policy, has not mapped easily onto the evolving best practice generic framework found in other sectors; a framework where the effective separation of roles and responsibilities is explicitly maintained in order to maintain a focus on the 'high modernism' of good governance rather than 'hyper-innovation' in policy, which may lead to policy catastrophes. This is an area in which select committee and NAO inquiry could be helpful, particularly into the effectiveness of the new policy/institutional interface, given the specific educational outcomes to be achieved. The role and relationships of the recently launched Ofqual, the new Qualifications and Curriculum Development Agency (QCDA), the Department of Education and Skills, the Department of Universities, Industry and Skills, et al, provides an important policy and research area in effective governance at this time, given this is all in the context of developing academic and vocational qualifications which involve commercial providers and awarding bodies, and qualifications which span the age 19 divide. Education and climate change policy evaluation (given the CCC) provide challenging comparators for testing the efficacy of the conclusions of our research, and the proposals set out in this policy overview.

# RESEARCH REPORT

## 1. INTRODUCTION

### The Theme

In the past two decades ‘risk-based’ approaches to regulation, public policy and management, and business management have become increasingly salient features of government, policy making and regulation.<sup>1</sup> Risk-based regulation involves attempts to strictly control regulation and is connected to the deregulatory initiatives and rhetoric of the 1980s and 1990s, the rise of the regulatory state and the concerns about overregulation. It also involves attempts to inject greater objectivity and transparency into the regulatory process, and thus to legitimise it, particularly in the eyes of business and industry (Hutter, 2005, pp2-3).

Despite this, there remain significant controversies about how risk should be managed and there are widespread and varying doubts about whether regulation is appropriately targeted at risk. There is a commonly held view that we live in a risk averse society with risk averse policy making leading to a ‘nanny state’ overseeing every activity with an element of risk in it. Individual freedoms and a sense of adventure are highly constrained by the state. In certain sections of the media much ire is directed at health and safety regulation and particularly the Health and Safety Executive, whose ‘burgeoning budget’ should be ‘slashed’ to reduce the problem of this ‘overweight state’.<sup>2</sup> Stories abound about excessive regulations which can lead, for example, to fatuous warnings on packets of nuts that say ‘this may contain nuts’. In a more considered way the HSE’s allegedly excessively risk averse approach to the regulation of the rail industry was also highly criticised by industry players and observers.<sup>3</sup> An apparent result of this was the transfer of the regulation of rail health and safety from the HSE to the rail regulator, though the 2004 white paper on railways focused on changes to streamline the regulatory system and enable the regulator to take a whole industry view.<sup>4</sup>

In a recent report the Better Regulation Commission articulated an argument which corresponds to this commonly held view.<sup>5</sup> In particular they argue that risk averse society and government leads to overregulation and the stifling of initiative and individual responsibility. This report raises some important questions and it seems that, despite the drive towards risk-based regulation, actual regulation is not proportionate to risk.

There have also been some governmental initiatives in recent years which also indicate a sense within government that all is not well with risk policy and regulation. Perhaps the most significant recent development is the creation of the Risk and Regulation Advisory Council, a governmental advisory body under the auspices of the Department for Business, Enterprise and Regulatory Reform (BERR). This is driven by governmental belief that “*policy making would benefit considerably from a fuller and more rounded consideration of public risk*”.<sup>6</sup> A

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<sup>1</sup> Hutter B M (2005), The Attractions of Risk-based Regulation: Accounting for the Emergence of Risk Ideas in Regulation, ESRC Centre for the Analysis of Risk and Regulation, Discussion Paper 33, LSE London, March.

<sup>2</sup> Times (2008), Caution! The state has gone haywire, London, 17<sup>th</sup> January.

<sup>3</sup> Bartle I (2005), The 2004 Rail Review: Towards a New Regulatory Framework, Occasional Paper 24, Centre for the Study of Regulated Industries, School of Management, University of Bath.

<sup>4</sup> Department for Transport (2004), The Future of Rail, White Paper, Cm 6233, July.

<sup>5</sup> BRC (2006), Risk, Responsibility and Regulation. Whose risk is it anyway?, October, London, Better Regulation Commission.

<sup>6</sup> BERR (2008), Risk and Regulation Advisory Council, <http://www.berr.gov.uk/about/economics-statistics/rrac/index.html>.

central question informing its work is ‘when should the state manage a risk on behalf of everyone else and when should another body or individuals themselves be allowed to manage the risk?’ (BERR, 2008). The RRAC has an initial work programme which would engage with policy makers and external stakeholders (‘better conversations inside government/better dialogue with the public outside’) in a process of “*experiential learning, moving away from the former model of published reports and recommendations*” (BERR, 2008). It would also “*start to address the public’s appetite for risk – trying to unpick the frequent dilemmas between a desire for protection but a rejection of nannyism*” (BERR, 2008). In addition, in late 2007 the BRE initiated a review on risk and the health and safety regime focusing particularly on small employers and employers whose overall risk is relatively low. Its objective is to “*find ways to make compliance easier ... improve outcomes for employees, and maintain the confidence of the public in the health and safety system as a whole*”.<sup>7</sup>

The RRAC, its founding rationale and work programme indicate that government thinks all is not well but it also follows a series of institutional reforms relating regulation and risk. The roots of the RRAC lie in the ‘Better Regulation Task Force’, a Cabinet Office body set up to advise on efforts and initiatives involved in moving towards better regulation. In 2005 the BRTF was replaced by the Better Regulation Executive, an executive body set up in the Cabinet Office but later transferred to BERR, and the Better Regulation Commission. The BRE’s main task is to drive the better regulation agenda forward while the BRC, which was replaced by the RRAC in 2008 was an advisory body on better regulation.

However, many of the assumptions that underpin the view about excessive risk aversion and over regulation can be questioned. For example, a recent House of Lords report notes that they “*have been unable to find significant evidence that Britain has become an increasingly risk-averse society*”.<sup>8</sup> It can also be questioned just how systemic and widespread over regulation is. Arguably some areas (eg, climate change and road transport safety) are under-regulated – regulations may not be stringent or effective enough even though there could be many of them.

The commonly held view about excessive health and safety regulation is questionable and reinforced by exaggerations or fabrications by certain sections of the media. It seems that (like many mythical stories about the EU) many stories about health and safety are exaggerations or fabrications by sections of the media pursuing their own anti-regulation agendas. In an attempt to stem the tide the HSE has a ‘myth of the month’ website.<sup>9</sup> It noted in September 2007, for example, that a media story about a health and safety requirement that children wear safety glasses and other protective gear to play conkers was untrue (it arose from one school where this had been suggested, it was not considered by the HSE as a general requirement). It can also be legitimately asked what impact on workplace safety and its gradual year on year improvement would ‘slashing’ the HSE’s budget have?

In the wake of these issues about risk we therefore consider it timely to reassess and reconsider the role of risk in the policy making and regulatory processes, particularly from the perspective of the ideals and techniques of better regulation which are becoming embedded within government.

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<sup>7</sup> BERR (2007), *Improving Outcomes from Health and Safety. A Call for Evidence*, London: Department for Business, Enterprise and Regulatory Reform, November, p5.

<sup>8</sup> House of Lords (2006), *Government Policy on the Management of Risk*. Select Committee on Economic Affairs, 5<sup>th</sup> Report of Session 2005-06, June, p12.

<sup>9</sup> <http://www.hse.gov.uk/myth/index.htm>

## Questions

These issues in the regulation and management of risk raise many important questions, most generally and central to this study is what the state should do, particular in its regulatory activities, in response to risk. More specifically:

- can a coherent policy and regulatory framework be established?
- what are the different notions of risk and risk management and how should they inform the policy and regulatory process?
- have modern institutions and mechanisms of regulatory governance, notably independent regulatory agencies, principles of better regulation and the Impact Assessment, contributed towards improving the management of risk in the modern regulatory state?
- what improvements could be made to these institutions and mechanisms?

## Outline

The issues and the range of themes covered in the literature in risk and risk decision making is huge. There are conceptual mazes surrounding the central and apparently simple concepts such as risk, uncertainty and hazard. Important issue areas in risk cover almost all important human activities and endeavours including, for example, transport safety, food safety, risk in financial markets and investment (on which there is huge economics literature), risk seeking and risk avoiding personal activities. Risk is a theme that covers and cuts across many disciplines. Scientific and mathematical disciplines are involved, for example, on the safety and probabilities of failure of nuclear power stations and risks associated with environmental pollution change. Economics is concerned with the costs and benefits of risk avoiding and risk seeking behaviour and cost-benefit analysis of interventions to mitigate risk. Other social sciences, notably psychology, sociology, and political science are concerned respectively with the individual and risk, risk in society and social policy, and risk decision making processes in government.<sup>10</sup>

Many of these issues and questions have been extensively analysed in the literature such as the nature of risk and risk averseness, the precautionary principle and its application, what the state should do and in what circumstances and what the appropriate policy, regulatory and management framework should be.

Making sense of risk and regulation and attempts at setting up a conceptual framework are therefore not straightforward. As the government notes in relation to the recently created Risk and Regulatory Advisory Council, there are “*frequent dilemmas between a desire for protection but a rejection of nannyism*”. ‘Better regulation’ is an approach to policy making and regulation which has developed in the past decade and might contribute to the better regulation of risk. Its focus is on regulatory quality and offers the prospect of clearer targeting of regulation at the policy problem. Better regulation and its main instrument, the regulatory impact assessment (RIA) (now the Impact Assessment, IA), have become established in British government and seem to offer a more coherent and systematic approach to the regulation of risk. However, the application of the ideals and techniques of better regulation, while offering the potential for improvement, are no panacea. Questions have been raised, for example, about the ambitions and scope of the IA, whether it is appropriate

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<sup>10</sup> Kemshall H (2002), *Risk, Social Policy and Welfare*, Buckingham: Open University Press; Taylor-Gooby P and Zinn J O (2006), *The Current Significance of Risk*, in Taylor-Gooby P and Zinn J O (eds), *Risk in Social Science*, Oxford University Press, pp1-19.

for strategic analysis of complex and multi-faceted policy problems and environments in which questions of risk are often addressed.<sup>11</sup>

The core of the report is divided into three sections. Firstly, section 2 examines the theoretical and academic literature on risk, regulation and the state. It sketches the background of 'risk-based' regulation and policy making, investigates the key concepts of risk, uncertainty and hazard and considers contemporary themes and ideas such as the risk society, risk averseness and risk seeking. The section also looks at the notions of public and private risk, where their boundaries are and how they can be defined. There are important questions about how the institutions and processes of the state should respond to risk. In particular, how dilemmas are handled, such as, on the one hand the increasing expectation that progress means risks and dangers should decline (as they have in many areas) and the reasonable expectation that the state plays an important role in this. On the other hand we live in a free society and it is reasonable to expect that the state's response to risk is not overbearing and overburdening.

Section 3 maps out the contemporary governing terrain of risk in Britain. Firstly, central government's main institutions for the regulation of risk are sketched. This is followed by summaries of two important governing strategies of risk, that of the HSE (Reducing Risk, Protecting People, 2001) and the Cabinet Office's Risk Strategy (2002).<sup>12</sup> The more recent risk initiatives in the context of better regulation are then outlined, notably the institutional changes and the reports and programmes of the better regulation bodies.

Section 4 is an analysis of decision processes surrounding risk, particularly in relation to the mechanisms of better regulation. This section commences by outlining the general models or frameworks for risk decision making. These models are compared with key governmental and practitioner approaches to risk decision making established in recent years. The section then focuses on risk decision making in practice and particularly the role of the Impact Assessment.

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<sup>11</sup> Baldwin R (2005), Is Better Regulation Smarter Regulation?, Public Law, Autumn, pp485-511.

<sup>12</sup> HSE (2001), Reducing Risk, Protecting People: HSE's Decision Making Process, Health and Safety Executive, HSE Books; Cabinet Office (2002), Risk: Improving Government's Capability to Handle Risk and Uncertainty, Strategy Unit Report, November.

## 2. RISK, THE STATE AND REGULATION

### The Rise of Risk-Based Regulation

A key element of the increasingly salient risk-based approaches to regulation, public policy and management appears to entail “*a move to a ‘cost benefit analysis culture’, that is a move away from informally qualitatively based standard setting towards a more calculative and formalised approach*” (Hutter, 2005, pp3-4). In many professions, such as social work or psychiatry, it represents a shift of focus from risk and dangers in particular circumstances towards a focus on risk in relation to large groups of people.<sup>13</sup> In policy and regulatory fields there are significant variations in risk regulation regimes eg, between pesticides in drinking water and the cancer risks of radon in homes.<sup>14</sup> In some areas risk regimes use highly quantified approaches, eg, in transport or nuclear power stations, in others the approaches are more qualitative, eg, regulation of guns or holiday activity centres.

Although the discourse of risk-based regulation is recent, arising in the 1990s and 2000s (Hutter, 2005), risk has been a central aspect of regulation for decades if not centuries. Regulation per se “*can be seen to be centrally concerned with the control of risk*”.<sup>15</sup> State centric occupational health and safety regulation, an area of regulation in which risk is an explicit driving force, grew significantly in the 19<sup>th</sup> century. It was particularly the growing industrialisation in 19<sup>th</sup> century Britain that led to significant health and safety legislation, particularly a string of Factory Acts and the Railways Act, 1893.<sup>16</sup>

Today in the UK, risk-based approaches are, in varying ways, key features in the declared aims of regulation in specific sectors and cross sectoral and cross governmental approaches to regulation. To many policy practitioners in business, industry, government and parliament, the aspiration for risk-based regulation is deeply embedded and seems self evident (and expressed in almost irrefutable language). The 2007 House of Lords report on economic regulators noted, for example, that “*we have not heard, nor did we expect to hear, any argument against the concept of applying resources to the areas of greatest risk*”.<sup>17</sup> The discourse of risk has become embedded in major governmental reviews, such as the Hampton Review in 2005 on reducing administrative burdens, and in many sectoral regulators, notably financial services (see **Appendix 1** for details).<sup>18</sup>

### Key Concepts: Hazard, Risk and Uncertainty

The notion of a hazard appears to be straightforward; it is the capacity or potential to do harm (HSE, 2001).<sup>19</sup> The notion of risk can be conceptually distinguished from hazard; risk is the likelihood of harm occurring together with the extent of harm. However, in common usage the two concepts are often conflated. An activity such as smoking or drinking is a hazard, ie,

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<sup>13</sup> Lupton D (1999), *Risk*, London and New York, Routledge, p92.

<sup>14</sup> Hood C, Rothstein H and Baldwin R (2001), *The Government of Risk, Understanding Risk Regulation Schemes*, Oxford University Press, p6.

<sup>15</sup> Baldwin R and Cave M (1999), *Understanding Regulation, Theory, Strategy and Practice*, Oxford, Oxford University Press, p138.

<sup>16</sup> Foster C (1992), *Privatisation, Public Ownership and the Regulation of Natural Monopoly*, Blackwell, Oxford.

<sup>17</sup> House of Lords (2007), *UK Economic Regulators, Select Committee on Regulators, 1<sup>st</sup> Report of Session, 2006-07, November*, p38.

<sup>18</sup> Hampton (2005), *Reducing Administrative Burdens: Effective Inspection and Enforcement*, HM Treasury, London.

<sup>19</sup> Breakwell G M (2007), *The Psychology of Risk*, Cambridge: Cambridge University Press, p2.

they have the potential to do harm, but they are often described as a risk. Even the notion of harm is not fixed and uncontested: social and cultural factors often impact on what is perceived as a harm thus no easy and fixed definitions of hazard can be distinguished (Breakwell, 2007, p3).

Definitional difficulty pervades the concepts risk and uncertainty. In the literature on risk and risk regulation there are, sometimes explicitly, sometimes implicitly, two perspectives on risk and uncertainty which are deeply embedded and can be referred to as ‘the two cultures’ (Kemshall, 2002 p11).<sup>20</sup> The first perspective can be labelled variously as ‘scientific-rationalist’, ‘realist-absolutist’ or ‘modernist’ while the second ‘social constructivist’, ‘relativist’, ‘political/democratic’ or ‘post modernist’.<sup>21</sup> Of course, understandings of risk are more subtle than this rather stark dichotomy. There are, for example, some commonalities between the perspectives and many subtle differences within each. Much analysis and many analysts strive to move beyond these rather rigid bipolar oppositions and seek a more complete analysis (Adam and van Loon, 2000, p8). **Table 1** provides a summary of the two perspectives of risk outlined in this section while **Appendix 2** looks into the concepts in more detail.

### **‘Scientific’ Risk**

The essence of the scientific view on risk is that it is an objective concept. Risk can be quantified and understood by mathematical, scientific and technological analysis and rational responses to risk can be developed based on the level of risk that society deems to be tolerable. In the scientific view risk and uncertainty are two different concepts. Risk is associated with circumstances in which the probability of particular outcomes is known or knowable, whereas uncertainty is when outcome probabilities are not known or not knowable (Lupton, 1999, p7).<sup>22</sup> In the former, probabilities are derived from empirical data from particular circumstances and can be used to calculate the probability of particular events from occurring in similar circumstances. Uncertainty refers to circumstances and events in which there are insufficient empirical data to develop formal and scientific means of calculating the probability of outcomes.

In this vein of thinking a standard technical view of risk has developed and can be defined as “*the statistical expectation value of an unwanted event which may or may not occur*”.<sup>23</sup> The ‘expectation value’ is the probability of the occurrence of the unwanted event multiplied by its severity. The severity of the consequence might be, for example, the number of people killed in an accident. Risk is thus the statistically expected number of deaths associated with potential accidents. It is a standard view of risk adopted by and informing many public policy practitioners.<sup>24</sup> Much economic analysis of risk is within this perspective; cost-benefit analysis is undertaken to assess what individuals and society are willing to pay to mitigate risk.

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<sup>20</sup> Hood C and Jones D K C (1996), (eds), *Accident and Design. Contemporary Debates in Risk Management*, London: UCL Press, ppxi-xiii.

<sup>21</sup> Adam B and van Loon J (2000), *Introduction: Repositioning Risk; the Challenge for Social Theory*, in Adam B, Beck U and van Loon (eds), *The Risk Society and Beyond, Critical Issues for Social Theory*, London: Sage Publications, p8.

<sup>22</sup> Knight F H (1921), *Risk, Uncertainty and Profit*, Augustus M Kelley, New York (Reprints of Economic Classics, 1964), pp46-48.

<sup>23</sup> Hansson S O (2007), *Risk*, *Stanford Encyclopaedia of Philosophy*, <http://plato.stanford.edu/entries/risk/>.

<sup>24</sup> Smith D and Toft B (1998), *Risk and Crisis Management in the Public Sector. Editorial: Issues in Public Sector Risk Management, Public Money and Management*, 18:4, pp7-10.

### **‘Social Constructivist’ Risk**

The social constructivist notion of risk derives from a wide ranging critique of the scientific view. There is a particular scepticism about the extent to which quantifiable risks can be identified; there is a ‘myth of calculability’ (Kemshall, 2002, p5). The meaning of the quantification of probabilities of outcomes beyond strictly controlled and simple actions such as rolling of dice or tossing coins can be questioned (Hansson, 2007). Current circumstances and actions almost invariably differ in some way from previous ones (from which probabilistic data is derived) and therefore outcome probabilities cannot be ascribed with any degree of certainty. In contrast to the scientific view there is no clear distinction between risk and uncertainty; in practice they merge together and ‘blur, converge and overlap’.<sup>25</sup>

Another important critique of the scientific view is that subjective risk is much more than an irrationality held by some which can and should be overcome by good communication and education. The dismissal of subjective risk as irrational ignores the possibility that it can make as much sense as objective risk (Lupton, 1999, p106). While those taking the scientific view see perceived risk as unreal and as existing only in the minds of subjects, those who stress the importance of subjective risk argue that they derive from different knowledges of the world and approaches to life each of which have their own valid logic and rationale. Moreover, subjective perceptions of risk can affect behaviour which in turn can affect so-called objective outcomes: Adams notes that “*behaviour can be measured, but its causes can only be inferred*”.<sup>26</sup> The scientific model thus draws the false conclusion that because behaviour and outcomes can be objectively measured, they have an objective cause, and thus can objectively be remedied.

**Table 1: Summary of two perspectives on risk**

	<b>‘Scientific’</b>	<b>‘Social constructivist’</b>
<b>Risk and uncertainty</b>	<ul style="list-style-type: none"> <li>• Risk and uncertainty are separate concepts;</li> <li>• Risk can be derived from empirical data, quantified, probabilistic analysis undertaken;</li> <li>• Risk defined as ‘statistical expectation value of an unwanted event which may or may not occur’;</li> <li>• Uncertainty is when there is insufficient data and knowledge of processes to carry out probabilistic analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Risk and uncertainty blur and merge in most real situations;</li> <li>• There are limits to the usefulness of quantitative techniques;</li> <li>• Qualitative judgements of risk and uncertainty are required;</li> <li>• Judgements on significance of risk based on a variety of social, psychological and political factors as well as scientific and technical;</li> </ul>
<b>Subjective and objective risk</b>	<ul style="list-style-type: none"> <li>• Subjective and objective risks are separate;</li> <li>• Objective risk exists ‘out there’ separate and distinct from that in people’s minds;</li> <li>• Subjective or perceived risk is that in the minds of people and can be very different from objective reality.</li> </ul>	<ul style="list-style-type: none"> <li>• Subjective and objective risk interact;</li> <li>• Objective risk can be affected by subjective risk;</li> <li>• Subjective and perceived risk, even when very different from objective risk, can be just as valid an input into deciding how to respond to risk.</li> </ul>

<sup>25</sup> O’Malley P (2004), *Risk, Uncertainty and Government*, Abingdon: Routledge-Cavendish, p18.

<sup>26</sup> Adams J (1995), *Risk*, London: UCL Press, p23.

The importance of perceived risk is emphasised by psychological and sociological approaches to risk. Several factors, which have social and psychological dimensions, have been “*said to impinge on perceptions of seriousness of risk*” (Baldwin and Cave 1999, p141). These include: catastrophic potential; degree of control over the risk; familiarity with the risk; degree of equity in sharing risk; visibility of the benefits of risk taking; potential to impose blame on risk creators; delay in manifestation of harm; and, voluntariness with which the risk is undertaken (Lupton, 1999, p106).<sup>27</sup>

### ***Practitioner Views on Risk and Uncertainty***

Despite the attractions of quantification and operationalisability, governmental practitioners rarely take a view which corresponds closely to the scientific idea of risk. The governmental body which addresses risk and uncertainty in one of the most explicit and direct ways is the Health and Safety Executive which has the responsibility for health and safety at work. It has made a comprehensive statements on risk policy and regulation and management in its report ‘Reducing Risks, Protecting People: HSE’s Decision Making Process’ (HSE, 2001). While the importance of the difference between risk (the chance of something happening) and hazard (the potential for harm) is stressed, risk and uncertainty are not simply conceptualised as polar opposites as they are in the scientific view of risk. There is an explicit recognition that risk cannot often be reduced to a ‘quantifiable physical reality’ (HSE, 2001, p11). The HSE also recognises the importance of different kinds of risk which draw from psychological and social perspectives, for example, the impact familiarity, controllability and voluntariness and their converses have on risk (HSE, 2001, p25).

This nuanced view of risk is also reflected in some of the work of another practitioner body dealing directly with risk, the Environment Agency. The main area of the agency’s work is on water management and particularly the risk of flooding. Although it undertakes extensive modelling of risk of flooding and quotes quantitative risks, eg, flooding in a particular area which might be subject to a one in 100 year risk, it recognises that it is impossible to do this accurately and to model the processes fully (Interview, Environment Agency). There is a high degree of uncertainty in the accuracy of the quantitative techniques, in the understanding of the physical processes of flooding and the probability and effects of changes in boundary parameters, such as climate and sea levels.

A rather different type of government body, the Treasury, has also addressed risk in relation to its policy making. In generic documentation on the management of risk definitions of risk are similar to those of the HSE. The Treasury notes that “*Risk is the likelihood, measured by its probability, that a particular event will occur*”.<sup>28</sup> This seems to correlate with the scientific notion of risk but it then notes that “*both hazards and risk are often subject to uncertainty. Uncertainty is the condition in which the number of possible outcomes is greater than the number of actual outcomes and it is impossible to attach probability to each possible outcome*”. That is, risk and uncertainty are not separable, and aligns with statements made by the Treasury elsewhere.<sup>29</sup>

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<sup>27</sup> OECD (2003), Emerging risks in the 21<sup>st</sup> century. An agenda for action, Paris: OECD, p55.

<sup>28</sup> HM Treasury (2005), Managing Risks to the Public, London, June, p8. [http://www.hm-treasury.gov.uk/documents/public\\_spending\\_reporting/governance\\_risk/psr\\_governance\\_risk\\_riskguidance.cfm](http://www.hm-treasury.gov.uk/documents/public_spending_reporting/governance_risk/psr_governance_risk_riskguidance.cfm)

<sup>29</sup> HM Treasury (2004), The Orange Book. Management of Risk – Principles and Concepts, October, p9.

[http://www.hm-treasury.gov.uk/documents/public\\_spending\\_reporting/governance\\_risk/psr\\_governance\\_risk\\_riskguidance.cfm](http://www.hm-treasury.gov.uk/documents/public_spending_reporting/governance_risk/psr_governance_risk_riskguidance.cfm)

## Systemic Risks and the ‘Risk Society’

The idea that there is an important unquantifiable and incalculable dimension of risk is a key aspect of what some see as emerging ‘systemic risks’ (OECD, 2003) and the rise of the ‘risk society’.<sup>30</sup> In a substantial report the OECD argues that ‘emerging systemic risks’ are becoming much more significant in the 21<sup>st</sup> century and that “*according to more than one measure, the damage caused throughout the world by many major risks appears to have increased in recent decades*” (OECD, 2003, p30). In the modern world we are increasingly dependent on complex, interdependent, technological ‘systems’, and it is our vulnerability to damage to these systems which is of concern in the 21<sup>st</sup> century (OECD, 2003). These systems include, for example, health services, transport, energy, food, water supply, communications, and financial services.

New forms of risk in modern society have been broadly conceptualised by Ulrich Beck (1992) as the ‘risk society’. Beck puts forward a sophisticated analysis of late modernity which has been subject of much debate, analysis and critique which can only be touched on here. In the risk society, scientific and technological developments together with an allied set of social, economic and political conditions have given rise to a set of risks and hazards the like of which have not been experienced before (Adam and van Loon, 2000). A view from modern science and technology would contend that as these risks have been created by human knowledge and ingenuity, they can be understood and controlled by similar knowledge and ingenuity. A central aspect of the risk society argument is a critique of this view. Many modern risks and hazards are inherently unknowable, unpredictable and unpreventable and, while most knowable, immediate risks and hazard have declined, the qualitative nature of risk has changed. Human induced risks have increased even if the impacts of natural ones have declined and the consequences of the former are much more wide ranging both geographically and across and within populations (Kemshall, 2002, p8).<sup>31</sup> **Appendix 3** examines systemic risks and risk society at greater length.

## Risk Aversion and Risk Seeking

There is a widespread perception that we live in a risk averse society and this has bad consequences. This can be quickly confirmed by internet searches using the terms ‘risk averse’ or ‘risk aversion’. One report, for example, describes Britain as once an “*upbeat, outgoing sort of race*” willing to take risks, but now strangled by a “*collective timidity ... now so serious that it is posing a threat to our willingness to take on almost any sort of challenge*”.<sup>32</sup>

It is argued that a ‘culture of fear’ has developed in recent decades affecting a whole swathe of public and private activities.<sup>33</sup> Risk aversion can be seen as closely connected to, if not synonymous with, the risk society (Furedi, 2002, p.64) which might be more appropriately labelled as the ‘risk-averse society’ (Scott, 2000, p39). The risk society appears to be one in which ‘not taking risks is positively advocated’ and indeed portends a world in which the

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<sup>30</sup> Adam B, Beck U and van Loon (2000) (eds), *The Risk Society and Beyond. Critical Issues for Social Theory*, London: Sage Publications; Beck U (1992), *The Risk Society. Towards a New Modernity*, London: Sage Publications.

<sup>31</sup> Gray J (1998), *Nature Bites Back*, in Jane Franklin (ed), *The Politics of Risk Society*, Polity Press, Cambridge; Scott A (2000), *Risk Society or Angst Society? Two Views of Risk, Consciousness and Community*, in Adam B, Beck U and van Loon (eds), *The Risk Society and Beyond, Critical Issues for Social Theory*, London: Sage Publications, p36.

<sup>32</sup> Rogers L (2007) *The End of Risk*, *New Statesman*, 26 July.

<sup>33</sup> Furedi F (2002), *Culture of Fear, Risk Taking and the Morality of Low Expectation*, London: Continuum.

elimination of risk altogether is the ultimate objective (Furedi, 2002, p.64; Scott, 2000, p36). In this view risk aversion prevents us from taking opportunities to create a better world which, paradoxically, is likely to be a safer world.

The idea that we live in a risk-averse society and this has deleterious consequences is therefore undoubtedly widely held. However, we need to stand back a little and critically examine some of the assumptions. What is risk aversion and what is bad about it? If risk aversion means avoiding risk in many day-to-day activities what is wrong with that? Perhaps the majority do not want to be risk takers, pioneers and entrepreneurs; they are quite happy with a low risk world and wish to live low risk lives. Avoiding risk in certain circumstances therefore cannot on its own be said to be bad. The negative connotation of risk aversion must in some way be 'excessive risk' aversion. The difficult question, however, is when does reasonable risk aversion become excessive risk aversion? An answer might be derived from consideration of the economists' idea of risk aversion.

Risk aversion is a well established concept in economics (Hansson, 2007).<sup>34</sup> It can be identified quantitatively and in essence relates to the attitude of investors towards risk, particularly the value placed on the possibility of gaining a certain amount compared to that of losing it in particular risk situations. However, while an idea of risk aversion more suitable for real decisions in the real world could theoretically be derived from this economist's idea, in practice it is difficult. With the exception of highly controlled circumstances, it is extremely difficult to know the quantitative probability of particular outcomes with any degree of certainty.

To what extent does excessive and wide ranging risk aversion exist? It is not too difficult to think of examples of risk seeking (or at least non risk aversion) in large swathes of the population. Despite much information and education pointing to the dangers of unhealthy eating and drinking alcohol, smoking and drug taking, there are significant elements of society who are happy to take risks. Risk-seeking behaviour (or non risk aversion) and risk-aversion often co-exist in varying mixes. As Kemshall (2002 p3) notes, risk taking (eg, buying a lottery ticket) and risk avoidance (eg, avoiding certain foods in the face of the low probability of contracting BSE) occur at same time.

If some degree of risk aversion exists, albeit more subtle than the common perception, and we want to do something about it, a key question is, what causes it? In the literature many arguments of varying depth and credibility are presented. One argument is that a new industry of 'fear entrepreneurs' – lobby groups, campaigners, regulators and inspectors' have been created "*whose livelihoods depend on fuelling concern about the dangers of everyday life*" (Rogers, 2007). There are arguments about the cause of risk aversion which derive from advanced and advancing industrial society that have been discussed above. There is also an argument that risk aversion amongst professionals, for example, in the health care or social work areas, arises from an increasing tendency to apportion blame and for individual accountability (Lupton, 1999, p46; Kemshall, 2002 pp9-10, 53).

Broader arguments focus on the structure of society. One is that modern society is too collectivist. Individuals expect organisations, society and the state to reduce risk and develop a safer world. In return the state and collective organisations strive more and more to reduce

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<sup>34</sup> Rabin M and Thaler R H (2001), Anomalies, Risk Aversion, Journal of Economic Perspectives, 15:1, pp.219-232.

risk by intervening in the actions and activities across society, industry and the economy. However, the social science literature focuses predominantly on the rise of individualism and neo-liberal political economy and even the rise of the very notion of risk within public and political discourse. Many argue that neo-liberalism, and the higher profile of the idea of risk, has shifted the focus of risk from society to the individual (Kemshall, 2002, p31, Lupton, 1999, p101).<sup>35</sup> There has been a ‘privatisation of risk’ and many issues that were clearly seen to be public matters have been transformed into ‘private troubles’ (Kemshall, 2002, p8). **Appendix 4** goes into more detail about risk aversion and risk seeking, particularly their nature and causes.

## Public and Private Risk

In the management of risk by the state in the UK the notion of ‘public risk’ has recently gained prominence. In launching the Risk and Regulation Advisory Council in 2007 the prime minister noted that “*policy making would benefit considerably from a fuller and more rounded consideration of public risk*”.<sup>36</sup> In a report on managing public risk the BRC described public risk as the “*next frontier for better regulation*” (BRC, 2008).

Interpretation of the BRC’s reports (BRC, 2006, 2008) indicates that the problem of public risk and better regulation in broad terms is one of two things (see section 4 for more on these reports).

- the state is regulating risks that should rightly be seen as private risks and not regulated by the state. The stress on the importance of individual responsibility in the 2006 report is indicative of this;
- the state is overregulating public risks. The processes (a ‘regulatory spiral’) by which the state overregulates risks which are nevertheless rightly public risks is a central theme of the report.

A key question is what is ‘public risk’ and how can it be distinguished from its (presumed) opposite, private risk? One definition of public risk is those risks which are optimally managed at the level of the state.<sup>37</sup> This definition appears limited as it begs the question ‘what risks should be managed at state level?’ but begging questions was the intention. Unfortunately the governmental documents which have raised the idea of public risk do not address its nature and the risks which should be addressed at state level. Also the notions of public and private risk are not central and explicit themes of the extensive literature on risk (though they pervade the literature implicitly).

Public and private risk are sometimes (and often only implicitly) an issue within analyses of risk management. For example, one of a number of key questions raised in a book on debates in risk management was “*where is the line to be drawn between risk to be managed by the state, and those to be managed by individuals, social groups or corporations?*”.<sup>38</sup> This indicates that there are also questions about what non-state regulated risk is, is it only private individual risk, or possibly risk managed by organisations such as companies or civil society organisations (the church and religion generally, for example, have regulated and continue to

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<sup>35</sup> Webb S A (2006), *Social Work in A Risk Society, Social and Political Perspectives*, Basingstoke: Palgrave Macmillan.

<sup>36</sup> BRC (2008), *Public Risk – the Next Frontier for Better Regulation*, London, Better Regulation Commission, p3.

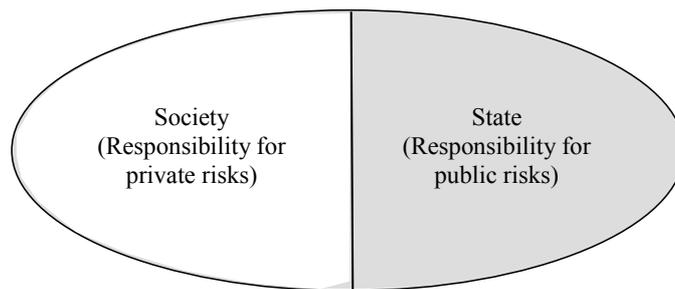
<sup>37</sup> Macrae D (2008), Notes from seminar on governance, risk and accountability, London, 7<sup>th</sup> April.

<sup>38</sup> Jones D K C and Hood C (1996), Introduction, in Hood C and Jones D K C (eds), *Accident and Design, Contemporary Debates in Risk Management*, London: UCL Press, p6.

regulate some individual actions, in past centuries, notably in the middle ages it intervened quite significantly in individual behaviour). However, the book draws no easy, clear or generalisable conclusions on private and public risk. It discusses a number of key themes in risk management, such as institutions, quantification, blame apportioning, technocratic versus participatory risk management. One conclusion is that “*the issue of whether to adopt a ‘statist’ or ‘non-interventionist’ approach to risk management underlies many of the debates in the field and might well be identified as a further separate dimension*” (Hood and Jones, 1996, p205). This indicates a view that distinguishing between public and private risk cannot be achieved using simple and parsimonious criteria but requires engagement with many of the complex themes that pervade risk management.

Broader, political and philosophical notions of state and society, and of liberty and authority might provide a clearer and more grounded idea of private and public risk and the domains of within which responsibility for them lies (O’Malley, 2004). The traditional western liberal view of state and society is that they are two distinct and separate entities as encapsulated in the commonly held conception of the ‘free society’. State and society are, of course connected as shown in **Figure 1**, but inherent in the notion of the free society is that there is a clear area in which the state should not intervene. In this area risk is and should be private.

**Figure 1: State and society: separate but connected entities**



However, there still remains the question of where the boundary should be between public and private risk, between state and society. Classical liberalism of the 18<sup>th</sup> and 19<sup>th</sup> centuries has clear answers to that question. O’Malley (2004, p30) notes that:

“The agenda of classical liberals had been to create a society in which the future was no longer to be set by governmental decrees and a moral economy. The market and ‘voluntary’ contractual relationships were to provide core techniques for creating and governing freedom in social and economic life”.

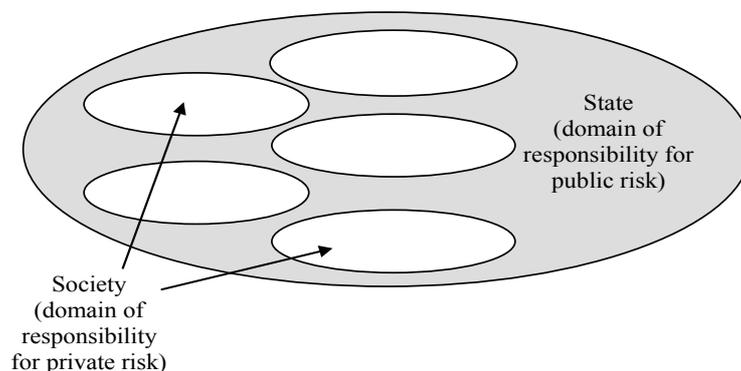
O’Malley goes on to say that “*subjects were to be exposed to uncertainties*” indicating that there is a clear sphere in which the state had no right to be involved whatever risks and uncertainties it exposed individuals to. In this representation, both the size of the state (and what is taken to be ‘public risks’) is small and the interconnections between the state and society are highly delimited, ie, setting the basic legal and political framework to enable free individuals to govern themselves. In the late 19<sup>th</sup> century Mill drew on and extended classical liberalism a central element of which was that the only justification for interference (collective or individual) in the actions of an individual is self protection. While interpretation of this can be fraught and complex, it appears in line with the above model.

The 20<sup>th</sup> century, however, has seen the significant advance of what might be termed ‘social liberalism’ and with it a larger model of the state with much more complex connections to society. Arguments for and political trends towards social insurance and social security gained ascendancy and the late 19<sup>th</sup> and early 20<sup>th</sup> century making classical liberalism appear rather anachronistic (all this is encapsulated in the extensive literature inter alia on negative and positive freedoms, and on civil and legal rights through rights of political participation towards economic and social rights). This remains the case in the early 21<sup>st</sup> century, despite the neo-liberal revolution of the late 20<sup>th</sup> century (when the state withdrew from active management of economic activity, though not from much of its regulation), and strong normative arguments made by some for the neo-liberal revolution to continue more deeply into the social domain (ie, reduce social risk management undertaken by the state) and return more towards classical liberalism. Arguably, however, (see Appendix 4 for more on this) it is the retreat of the state in the economic domain (eg, individuals having to bear more economic risks, eg, investments, pensions, jobs etc) that has stimulated pressure for more management of the consequent social hazards.

As a result of this (and analysis of many contemporary case studies) we argue that the model of public and private risk as given above is not suited to the modern world. While recognising the various normative arguments for and against, we argue that a model of society ‘enclosed’ within the state is a better representation of the domains of responsibility for public and private risk (see **Figure 2**). There still remain clearly separate domains of state and society (and thus public and private risk) reflecting the widespread idea of free society.

In this conception two key ideas underpin relations between state and society. First, there is no single universal principle that dictates where the boundary between state and society should be drawn. The boundary is highly dependent on a wide range of contemporary social and political norms which can vary between cases and circumstances. Second, the state has a legitimate interest and attention in almost all social activity; there are almost no domains in which as a matter of principle the state has no interest. It must be stressed does not mean intervention; social and political norms mean there are many areas in which the state does not intervene.

**Figure 2: State and society: separate entities but society ‘enclosed’ within the state**





### 3. RISK DECISION MAKING

#### Approaches to Risk Policy and Regulation

The above discussion indicates that the notion of risk and the prevalence of risk aversion and risk seeking are all contested. As a consequence there are different approaches to risk policy making and regulation. In discussing the aspiration towards ‘consistent risk management’ Hermansson distinguishes three models: a ‘standard model’, highly recognisable from the above discussion of the ‘scientific’ notion of risk, a ‘model of inviolable rights’ and a ‘model of procedural justice’.<sup>39</sup> More often two models of decision making are distinguished in line with the two ideas of risk described above. The scientific and social constructivist ideas suggest two different approaches to risk regulation and governance which are labelled here ‘technocratic’ and ‘socio-political’ and are summarised in **Table 3** (Baldwin and Cave, 1999, pp145-148).<sup>40</sup>

#### *A Technocratic Approach*

A technocratic approach, referred to as the ‘standard model’ by Hermansson (2005) and the ‘SPRAT’ model (‘social pre-commitment to rational acceptability thresholds’) by Hood can be identified.<sup>41</sup> Drawing on scientific ideas of risk, risk can be quantitatively identified and the quantitative effects of risk engineering can be assessed. Based on socially accepted value for life figures which are ‘willingness to pay’ or ‘willingness to accept’ assessments, acceptable levels of expenditure on risk mitigation can be calculated. Advocates of this recognise that there are inaccuracies in risk assessments and inevitably some judgements are required under uncertainty. However, they stress that this is not a reason to give up on ‘enlightened engineering’ but more reason for continuous and rigorous adherence to scientific principles of risk in policy making and risk management. Where they fail or are inadequate, better scientific and statistical techniques in risk assessment and better engineering of systems designed to reduce risk should be introduced. Where rational decision makers encounter significant obstacles from (uninformed) interest groups and public opinion better communication and education is required.

An argument for the technocratic approach is articulated by Stephen Breyer in his book ‘Breaking the Vicious Circle: Towards Effective Risk Regulation’ (cited by Baldwin and Cave, 1999, p146). It is based on an argument that existing risk regulation is in a vicious circle of tunnel vision (over regulation which does more harm than good), random agenda selection (driven by public’s attention rather than rational appraisal) and inconsistency (different methods used across government, issue areas and agencies). Overcoming the vicious circle requires institutional changes to embed a depoliticised and more rational regulatory decision making. A key change suggested is a central administrative organisation “with a mission of producing a coherent risk programme and a set of rational priorities covering risk regulatory programmes” (Baldwin and Cave, 1999, p146). Its authority and legitimacy would follow from its expertise, its technically sound outputs and its insulation from political pressures.

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<sup>39</sup> Hermansson H (2005), Consistent Risk Management: Three Models Outlined, *Journal of Risk Research*, 8:7-8, pp557-568.

<sup>40</sup> Royal Society (1992), *Risk: Analysis, Perception and Management*, Report of a Royal Society Study Group, London: The Royal Society.

<sup>41</sup> Hood C (1996), Where Extremes Meet: “SPRAT” versus “SHARK” in Public Risk Management, in Hood C and Jones D K C (eds), *Accident and Design. Contemporary Debates in Risk Management*, London: UCL Press, p209.

There is a wide ranging critique of this approach. The notion of objective and calculable risk on which it is based has been examined and criticised above. Adams (1995, p9) notes that the ‘prevailing orthodoxy’, as represented by the 1983 Royal Society report on risk and parts of the 1992 report, has failed in its attempts to make decision making on risk scientific (Royal Society, 1992).<sup>42</sup> The approach particularly fails in areas of high politicisation or lack of consensus on basic goals, when there is scientific uncertainty or the issues transcend scientific boundaries (Hood, 1996, p210). It is especially a failure to recognise that risk decision making processes and management are not just physical systems (such as a car engine or a heating control system) which can be analysed in a detached ‘objective’ manner; they are social systems in which conscious and intentioned human beings play important roles.<sup>43</sup> Risk communications exercises are often not successful and a key missing element is trust. Establishing and sustaining trust in risk decision making is not something that can be achieved in some kind of one way communication of the facts but requires engagement and conflict resolution (Cvetkovich and Löfsted, 1999, p6; Kemshall, 2002, p7).<sup>44</sup> In essence the approach, particularly that articulated by Breyer, is legitimated by technocratic expertise “*at the expense of legitimation through emphasis on democratic policy making, accountability and due process in the form of participation*” (Baldwin and Cave, 1999, p146).

Perhaps more fundamentally, the technocratic approach is essentially utilitarian which is subject of many well known criticisms. In particular, it can lead to violations of individual rights: “*the decisive criterion [of utilitarianism] is whether the total benefit exceeds the total risk (cost), the question of who is exposed to the risk becomes irrelevant’ thus one person could be exposed to all the risks while a second gains all the benefits*” (Hermansson, 2005, p562).

### ***A Socio-Political Approach***

This approach draws on criticisms of the technocratic approach and the recognition that risk is not simply a realist or physical phenomenon. As there are social, political and psychological aspects to risk, the decision making and management process requires engagement with the public and civil society as well as scientific analysis and engineering solutions. Trust, a crucial factor in risk management, requires engagement with the public as well as convincing scientific analysis. Models of risk also need to incorporate the varying ways in which subjective and objective risk interact, or more specifically how human behavioural responses to risk environments can affect the risk itself and the efficacy of the interventions aimed to mitigate risk (Adams 1995, p59). It all suggests a need to explicitly recognise the complexity, variability and conflicting values that often shape risk and risk management regimes; there is a need to “*understand risk as a complex category made up of many different ways of governing problems, rather than a unitary or monolithic technology*” (O’Malley, 2004, p7). Risk needs to be recast together with an understanding that the institutionalisation of risk in terms of insurance is very limited (Adam and van Loon, 2000, pp12-13).

In recognition of these complexities and incompatible values Hood (1996) suggests a decision making and management approach which enables an “*institutionalised ‘tug-of-war’ between incompatible pressures, with a balance tipping mechanism*”. To contrast it with the

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<sup>42</sup> Royal Society (1983), Risk Assessment. A Study Group Report, London: The Royal Society.

<sup>43</sup> Cvetkovich G and Löfsted R E (1999), Introduction: Social Trust in Risk Management, in Cvetkovich G and Löfsted R E, (eds), Social Trust and the Management of Risk, London: Earthscan, p3.

<sup>44</sup> On trust and risk also see, Watson S and Moran A (2005), Trust, Risk and Uncertainty, Basingstoke, Palgrave Macmillan.

technocratic SPRAT approach Hood labels it the ‘SHARK’ model (‘selective handicapping of adversarial rationality and knowledge’) (Hood, 1996, p210). Balance tipping mechanisms derive from procedural constraints rather than by outputs set only by scientific analysis. This more open process is more responsive to outside pressures and makes regulatory decisions less vulnerable to capture by a narrow group, ‘distortion’ of preferences and ‘groupthink’ (Hood, 1996, p215). This is in broad agreement with the ‘procedural model’, one of the alternatives to the standard model considered by Hermansson (2005). An open procedural based process can be fairer and enable a greater sense of voluntariness and control in risk decisions. While this model has problems – it can for example, lead to a violation of individual rights like the standard model – it does seem to be best placed for enabling risk decision processes to be ‘open for critical discussion’ and to enable “*an awareness of how our goals frame the decisions and a discussion of what those goals should be*” (Hermansson, 2005, p567).

An oft-voiced criticism of this approach is that it is vague and does not offer a clear prescription for government, regulation and management (Hood, 1996, p208). It amounts to a post modernity which offers little help as to which options should be chosen (Kemshall, 2002, p5). When asked what practical advice on risk management Adams (1995, p208) a strong critic of the conventional scientific approach, admits to a certain frustration that he could not provide many clear and hard prescriptions and his work can be perceived as ‘entertaining debunking’. Moreover, in offering no clear prescriptions it can be accused of excessive relativism. Most would argue that there are some absolute values and inviolable rights and times when scientific evidence is overwhelming and points unequivocally towards particular actions.

**Table 3: Summary of approaches to risk policy and regulation**

	<b>Scientific/technocratic</b>	<b>Socio-political (or socio-psychological)</b>
<b>Risk-based regulation and policy making</b>	<ul style="list-style-type: none"> <li>• Key decisions made by governmental experts;</li> <li>• Outside input limited mainly to scientific and technical experts;</li> <li>• Stress on ‘utilitarian approach’ ie, quantitative techniques for risk assessment and economic cost-benefit analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Stress on qualitative techniques which recognise different kinds of knowledge and understandings of risk and value placed on responding to them;</li> <li>• Democratic decision processes, ie, made by ministers with inclusion and dialogue with a wide range of differing actors;</li> <li>• Stress on a rights, societal concerns, and varying perceptions of risk.</li> </ul>
<b>Areas of applicability</b>	<ul style="list-style-type: none"> <li>• Low politicisation;</li> <li>• High trust;</li> <li>• High consensus;</li> <li>• Relevant knowledge from clearly bounded scientific and technical arenas.</li> </ul>	<ul style="list-style-type: none"> <li>• High politicisation;</li> <li>• Low trust;</li> <li>• Low consensus;</li> <li>• Relevant knowledge derives from many areas and crosses many knowledge and professional boundaries.</li> </ul>

Adams’s answer to the question about the lack of hard answers to better risk management is to compare it to asking for hard advice on managing life better. His conclusion is ‘sorry’

there are no easy answers to these questions (Adams, 1995, p209). The lack of clear answers, however, does not mean reverting to the mistakes of technocratic techniques nor giving up on more qualitative processes. There are no clear and easy answers to the management of life but very few suggest we should give up on life.

### **Approaches to Risk in the UK: Institutional Outline, Cabinet Office Strategy and the HSE's 'Reducing Risks, Protecting People'**

While risk policy and regulation is a feature of almost all areas of government, it is the system of health and safety, ie, its policy making, regulation, management, implementation and enforcement, which is the most distinct and recognisable area of risk policy and regulation.

#### ***Institutional Outline of the UK's Health and Safety System***

Within the health and safety system, it is occupational health and safety which is the most discrete and clearly defined area. The current system of health and safety in the UK came into being in 1974 with the 'Health and Safety at Work etc' Act. It "*set up new institutions and provided for the progressive revision and replacement of all health and safety law then existing*".<sup>45</sup> From April 1<sup>st</sup> 2008 the main institutions responsible for occupational health and safety are the Health and Safety Executive (HSE) and local authorities (HSE, 2002; BERR, 2008) (see **Figure 3**).<sup>46</sup> The HSE is the central body with overall responsibility for health and safety. It is under the auspices of the Department of Work and Pensions, the Secretary of State of which appoints up to ten people representing at least employers, employees, local authorities and the public interest. While the DWP has the sponsoring role, several other government departments have a direct input into the work of the HSE, notably, Department of Health, Department for Transport, Department for Business, Enterprise and Regulatory Reform, Department for Communities and Local Government, Department for Environment, Food and Rural Affairs.

The HSE is also the central executive body for occupational health and safety with general responsibility for the enforcement of legislation in the agriculture, energy, manufacturing and construction sections and public administration, health and education. Local authorities generally have responsibility for distribution, retail, leisure, catering and a variety of office based services.

Prior to April 2008 the Health and Safety Commission had overall responsibility for occupational health and safety with the executive functions undertaken by the HSE. On April 1<sup>st</sup> 2008 the HSC and HSE merged to form a single national regulatory body, the new HSE.<sup>47</sup> Most aspects of health and safety regulation remain the same: there are no changes in statutory functions of the previous HSE and HSC, all the fundamental contents of the Health and Safety at Work act remain the same, and there is no change in health and safety requirements nor day-to-day operations. The chair of the new HSE noted that "*with a single regulatory body we will be able to strengthen the links between strategy and delivery in order to provide the accountability expected of a public body in today's workplace climate*".

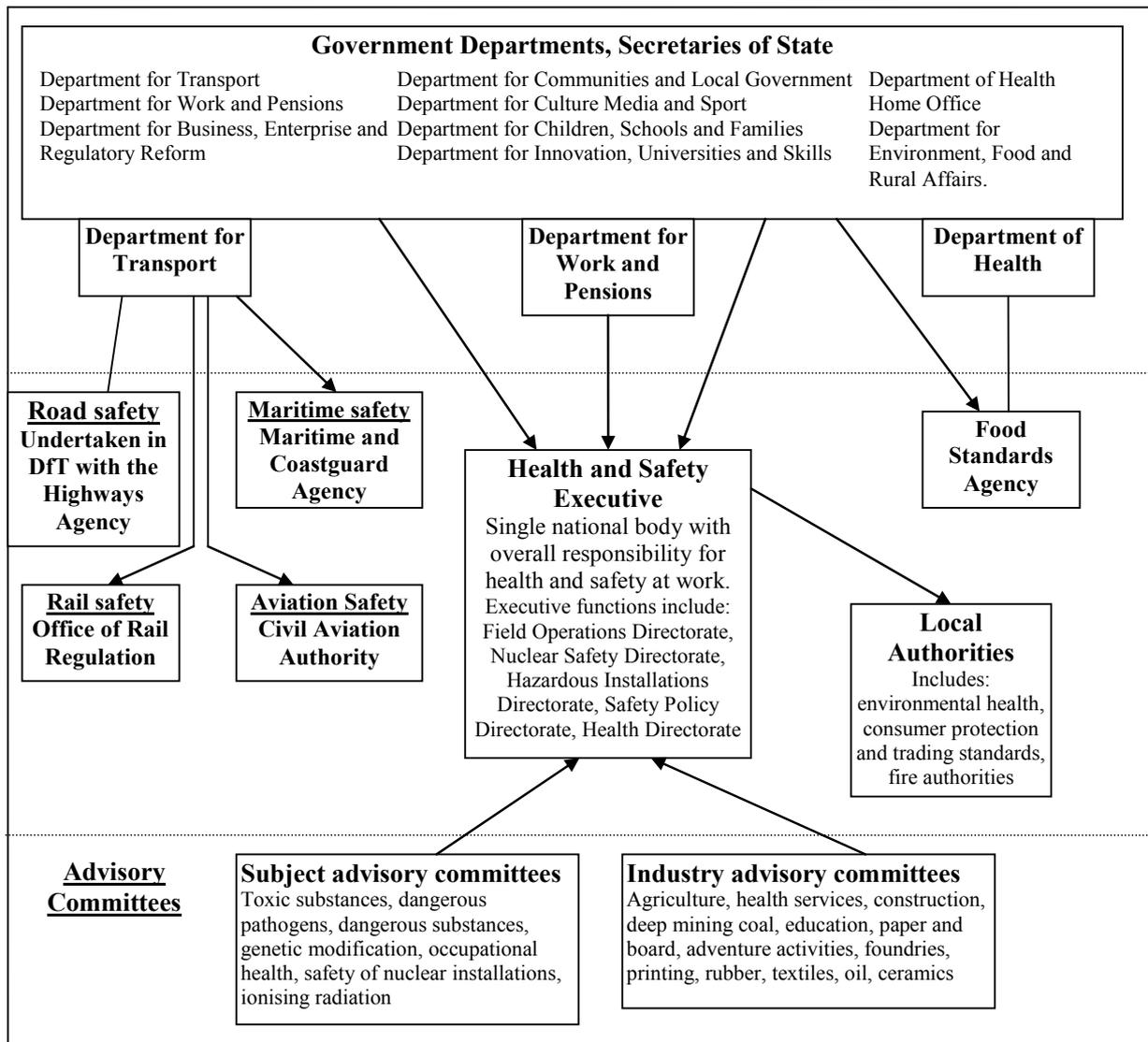
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<sup>45</sup> HSE (2002), The Health and Safety System in Great Britain, Health and Safety Executive, HSE Books, p4.

<sup>46</sup> <http://www.hse.gov.uk/aboutus/index.htm>

<sup>47</sup> Department of Work and Pensions (2008), Health and Safety Commission and Health and Safety Executive merge to form a single regulatory body, Press Release, April 1<sup>st</sup>.  
<http://www.dwp.gov.uk/mediacentre/pressreleases/2008/apr/emp070-010408.asp>

**Figure 3: Overview of the UK's health and safety institutions**



The diagram shows the main occupational health and safety institutions. These are centred on the Health and Safety Executive (HSE), which from 1<sup>st</sup> April 2008 is the single national regulatory body responsible for health and safety at work. Prior to April 2008 the the Health and Safety Commission had overall responsibility for health and safety at work and the HSE undertook the executive functions. Transport is a key area of occupational and public health and safety not directly covered by the HSE. There are other areas of public health not covered by the HSE such as food standards shown in the diagram.

There are several areas of health and safety which are not the responsibility of the HSE, particularly those which impact on the general public (ie, non-occupational). Some of the most notable (shown in the diagram) are transport and food health and safety. The responsibility for aviation, rail and maritime health and safety is located in separate executive and regulatory agencies: the Civil Aviation Authority; the Office of Rail Regulation; and the Maritime and Coastguard Agency (an executive agency). Road safety is undertaken directly in the DfT in association with the Highways Agency and local authorities. Food health and

safety is undertaken by the Food Standards Agency, with input from several government departments primarily the Department of Health.<sup>48</sup>

### ***Cabinet Office Strategy***

Issues of risk are inherent in a wide range of governmental activities including policy making, regulation, programme management, planning, operations, (eg, highways, local authority services, prisons) spending and investment spanning all government departments and agencies. A government strategy document on risk distinguishes three broad governmental roles in relation to risk: a regulatory role, a management role and a stewardship role (Cabinet Office, 2002, p10). Regulation involves setting the legal and rule based framework within which individuals and organisations act.<sup>49</sup> The management role refers to governmental conduct of its own business, including policy making, public service delivery and the performance of regulatory and stewardship functions. The stewardship role is to protect individuals and organisations from outside factors, such as from the natural environment, economic change and external threats to security. The approach to two of these roles, management and stewardship, is covered in detail in the Cabinet Office Strategy Unit Report 2002, while regulation is covered by the BRTF (and BRC/BRE).

#### **Risk: Improving Government's Capability to Handle Risk and Uncertainty, Strategy Unit Report, Cabinet Office (2002)**

- In recent years risk has become increasingly central to government's business;
  - Government's have always faced risks and uncertainties but risk has changed owing to rapid scientific and technological change and the increasing interconnectedness of the world;
  - The reports 'seeks to explore how far formal risk analysis can be usefully enhanced and made systematic, so that there is greater clarity about where analysis ends and judgement begins' (p6);
  - The report focuses on two (of three) key governmental roles in risk: (i) a stewardship role involving the protection from external threats such as natural disasters or security threats; (ii) a management role related to the management of its own business and the delivery of public services;
  - A third role, on regulation, is noted as important but not covered in the report.
- A programme to improve risk management across government is proposed. There are recommendations for action in six key areas (pp105-109):
- Handling risk should be firmly embedded in government's policy making, planning and delivery;
  - Government's capacity to handle strategic risks should be enhanced;
  - Risk handling should be supported by good practice, guidance and skills development;
  - Departments and agencies should make earning and maintaining trust a priority when dealing with risks to the public;
  - Ministers and senior officials should take a clear lead in improving risk handling;
- The quality of government risk management should be improved through a two-year programme of change linked to the Spending Review timetable, and clearly set in the context of public sector reform.

The approach to the risk and regulation is based on its stated 'principles of good regulation' (BRTF, 2003). The principles are proportionality, accountability, consistency, transparency and targeting and provide a means for "*measuring and improving the quality of regulation and its enforcement, setting the context for dialogue between stakeholders and government*" (p1). Risk is an explicit feature of proportionality and targeting: "*policy solutions must be proportionate to the perceived problem or risk and justify the compliance costs imposed,*

<sup>48</sup> <http://www.food.gov.uk/>

<sup>49</sup> BRTF (2003), Principles of Good Regulation, Better Regulation Task Force, London.

*enforcement regimes should be proportionate to the risk posed and enforcers should focus primarily on those whose risk activities give rise to the most serious risks” (p4, 6).*

There is much in the report to suggest that the approach, or at least the intended approach, is a synthesis of the scientific-technocratic and socio-political views of risk. For example, while the need to undertake quantitative techniques where appropriate is noted, more openness (Cabinet Office, 2002, p20) recognition of different configurations of risk, of changing social contexts, and of variations in risk and uncertainty is stressed along with the need to engage effectively with stakeholders.

The synthetic view is reflected in many of the report’s recommendations for improvement. Risk needs to be fully embedded in core governmental decision processes (Cabinet Office, 2002, p30). There is a need to formalise risk assessments, include risk considerations in policy making and other governmental processes and a ‘wider ranging consideration of risk’ (Cabinet Office, 2002, p32). ‘More measurement’ (statistics, technical analysis etc) and ‘more judgement’ (values, ethics, public acceptability etc) are seen as essential requirements in risk assessment. While the importance of technocratic processes are stressed including the use of independent agencies (eg, the Food Standards Agency), the need for good relations with the public are considered at length (chapter 5). The need for effective targeting of public concerns seems to be a recognition of the need for different processes depending on the issue, how much consensus there is and how politicised it is.

Aspects of the strategy, however, veer towards the technocratic. For example, a rather limited technocratic view of risk and risk communication, ie, one of primarily bringing public perceptions in line with experts’ views, appears to be advocated (Cabinet Office, 2002, pp81, 84). It seems that departments believe that the public does not understand rationalities of risk; nor do they appreciate that different risks perceptions are not necessarily irrational subjectivities to be dismissed but can be based on different and valid understandings of risk. Also, while the importance of establishing dialogue between scientists and non-scientists is stressed, this may simply defuse non-scientific views at lower and opaque levels. This contrasts with pitching different interests against each other at a higher more transparent level as suggested by Hood (1996).

The overall approach to regulation is difficult to discern from the principles of good regulation. A focus on risk and cost benefit analysis might suggest a preoccupation with the technocratic approach to risk while processes of accountability and transparency might suggest a movement towards the socio-political view. Neither, however, can be ascertained from the BRTF document. The notion of risk is not examined and articulated and it is not clear whether processes of accountability involve real engagement with the public and stakeholders or simply an attempt to communicate better ‘rational’ regulatory decisions made by experts. Examination of the key tool used in better regulation, the Regulatory Impact Assessment (now the Impact Assessment) needs to be undertaken to gain a fuller understanding of the role of risk in the regulatory process (see below).

### ***The HSE’s ‘Reducing Risks, Protecting People’***

One of the most comprehensive governmental statements on risk policy, regulation and management in recent years is the report by the Health and Safety Executive ‘Reducing Risks, Protecting People: HSE’s Decision Making Process’ (HSE, 2001). The document, which focuses on risk in the context of health and safety at work (ie, those areas of the HSE’s responsibility), is only a subset of risk in government, but it is a huge and important subset.

### **Reducing Risks, Protecting People: HSE's Decision Making Process (HSE, 2001)**

- Risk of suffering harm is an inescapable aspect of living but there have been big improvements in the quality of life, many environments are safer than ever before, and the trend in accidents at work has been downwards for many years (p6)
- An important distinction between risk (the chance of some adverse effect) and hazard (the potential for harm) (p6).
- Individual and societal concerns should be input into the decision making process (p12)
- A recognition that risk cannot often be reduced to a 'quantifiable physical reality', 'the evaluation of management of hazards are evolving to include values that cannot readily be verified by traditional scientific methods' (pp11,14)
- Nevertheless risk assessment 'expressed in qualitative or quantitative terms, or both' 'provide an essential ingredient in reaching decisions on the management of hazards' (p15)
- Risks imposed upon people should be justified (p18)
- Trust in regulators is crucial and there should be greater openness and transparency in decision making (pp18-19)

The HSE's decision making process comprises six stages (pp21-40)

1. Is the issue primarily one for the HSE?
2. Defining and characterising the issue;
3. Examination of options to address the issue;
4. Adopting a course of action in the expectation of stakeholder support;
5. Implementing the decisions;
6. Evaluation of decisions.

In practice the process is not linear with distinct and discrete stages; the boundaries merge and stages are often revisited in an iterative process. Stakeholders are involved in all stages but decisions often have to be taken by HSE or ministers when there is no consensus.

Key criteria for decision making are:

- equity-based (all individuals have the right to a certain level of protection),
- utility-based (benefit of doing something normally in monetary terms compared to costs); and
- technology-based (satisfactory protection is attained when 'state of the art' control measures are adopted).

Decision making based on these criteria is informed by the notion of 'gross disproportion', ie, costs of certain equity or technological actions may prima facie or after analysis be seen to be much higher than the benefits.

A 'tolerability of risk' conceptual framework, in which these decision criteria are drawn on, guides decision making.

- The framework includes three regions:
  1. a broadly acceptable region (risks are low and no further action required);
  2. a tolerable region (risks are assessed and regularly reviewed and control measures are often introduced);
  3. an unacceptable region (activities resulting in risk are normally ruled out but may be strongly controlled or constrained).

Risk of suffering harm is an inescapable aspect of living but there have been big improvements in the quality of life, many environments are safer than ever before, and the trend in accidents at work has been downwards for many years (p6). This long term decline (nearly two thirds) in reduction in workplace deaths has been stressed elsewhere by the HSE

(though the improvement has slowed in recent years).<sup>50</sup> It is also noted that there is a change in public attitudes from fatalistic acceptance towards greater reassurance that the system effectively controls risks.

Like the government's strategy report, the HSE's approach is largely a synthesis of the two approaches. Different kinds of risk which draw from psychological and social perspectives are recognised. For example, the differences between familiar, controllable and voluntary risks and their converses (HSE, 2001, p25). In particular, while the importance of the difference between risk (the chance of something happening) and hazard (the potential for harm) are stressed, risk and uncertainty are not simply conceptualised as polar opposites as they are in the (simplified) scientific view of risk. A central aspect of their approach is that, while quantitative techniques are used as widely as possible, their limits are recognised. In particular, societal concerns and human values require judgement which cannot easily be reduced to numbers nor dismissed as the irrational concerns of the uneducated. The HSE also stresses the importance of expanding participation (HSE, 2004).

The difficult question, however, is the extent to which practice matches aspiration. We can be suspicious about some statements and consider that they are merely paying lip service to broader considerations about risk regulation (eg, HSE, 2002, p14). We also know that in some policy areas, that there is a huge gap between the government's aspirations and objectives and actual policy and policy effectiveness. It could be the same regarding risk and health and safety practice.

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<sup>50</sup> HSE (2004), *Thirty Years on and Looking Forward. The Development and the Future of the Health and Safety System in Great Britain*, Health and Safety Executive, HSE Books.



## 4. RISK DECISION MAKING, BETTER REGULATION AND IMPACT ASSESSMENTS

### Governmental Initiatives and Institutional Change

There have been numerous governmental initiatives on risk and better regulation in the last decade.<sup>51</sup> The main initiatives in the last three years include the 2006 BRC report ‘Risk, Responsibility and Regulation’, the investigation of the health and safety system in 2007-08 by BERR and the creation of the Risk and Regulation Advisory Council in 2008. These are summarised and critically assessed in the following.

#### ***‘Risk, Responsibility and Regulation’: The BRC 2006 Report and Government Response***

The essence of the BRC’s argument presented in this report is that there is excessive risk averseness in society, business, industry and government and this leads to overregulation which stifles individual responsibility, and willingness to take risks and innovate. There is a ‘compensation culture’ a ‘culture of zero-risk tolerance’ (p7) and “*it appears that our society is often more concerned to reduce or abolish risk than to support enterprise, adventure and self-reliance*” (p13). They stress that there “*remains a strong fear of litigation in the UK*” even though there is little actual evidence of growing compensation. A key underlying assumption is that perceptions of risk and the need to regulate against it is much higher amongst ordinary people than experts and this leads to overregulation:

“There is a view that the policy dilemma at the heart of risk management is that policies responding to lay-people’s perceptions of risk tend towards over-regulation, while policies based entirely on scientific evidence will be seen as an inadequate response and will not be supported by the public” (BRC, 2006, p11).

The central process of risk and regulation is described by the BRC as a “*regulatory spiral: the public response, often encouraged by the media, to a perceived risk is usually to call for regulation*” (p7), government responds with ambitious claims that it can solve the problem but usually leads to embedding more regulation which does not address the problem adequately and creates unintended negative consequences. The regulatory spiral is shown in **Table 2**.

**Table 2: The BRC’s ‘regulatory spiral’ (BRC, 2006, pp7-9)**

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|--|
| <ol style="list-style-type: none"><li>1. The perception of a risk emerges over time or after a specific incident;</li><li>2. A public debate follows often based on incomplete information resulting in a call for ‘something to be done’ which is amplified by the media;</li><li>3. The public looks to the government to manage the risk;</li><li>4. In response the government makes ambitious claims that it can solve the problem with regulation but rarely considers the trade-offs involved;</li><li>5. Government’s role as risk manager is reinforced;</li><li>6. Regulations inevitably fail to solve all problems and lead to unintended consequences;</li><li>7. Some hazards are prevented but do not make news. Other hazards are not prevented leading for calls for more regulation;</li><li>8. As regulation increases there are complaints that liberties and enterprise are diminished and criticisms of the ‘nanny state’;</li><li>9. Governments are blamed for interfering and frustration with government increases;</li><li>10. Government can, if not careful, respond to the frustration with more regulation.</li></ol> |
|--|

<sup>51</sup> For details see Dodds A (2006), The Core Executive’s Approach to Regulation: From ‘Better Regulation’ to ‘Risk-Tolerant Deregulation’, Social Policy and Administration, 40:5, pp526-542.

**Appendix 5** summarises the BRC's recommendations and the government's response. The government accepted most of the general (and rather intangible) recommendations though it argues that many of the recommendations are covered in on-going governmental efforts at better regulation, such as simplification plans, impact assessments and post implementation reviews. Two specific recommendations, to set up a Fast Assessment of Regulatory Options Panel (recommendation 2) and to increase accountability of better regulation minister and others (recommendation 9) were rejected.

The report makes some big arguments about risk, risk averseness, individual responsibility and regulation. An uncritical and straightforward scientific view of risk appears to be taken, notably that lay-people's perceptions of risk are irrational and real or objective risk based on the views of scientists is poorly communicated. Much of this can be subject to the critique given above. For example, in reality there is no clear separation between subjective and objective risk ie, subjective risk can impinge on objective risk. Also subjective risk can be due to circumstances, such as familiarity, control and voluntariness, which can be entirely rational and reasonable to the subject even if they differ from the experts.

The BRC's evidence base is particularly limited, much of it is assertion. They select a number of case studies which support its argument without considering those which might be contradictory. It implies that a scientific approach to risk should be taken yet it is not particularly scientific in its case selection. There is little attempt to represent different kinds of cases, nor any attempt to establish just how widespread the purported problems are.

On the one hand the BRC imply that they want a more scientific approach to risk, on the other hand they are concerned with overregulation. This assumes that scientific analysis would mostly lead to less regulation than more socio-political responses. However, the BRC make no argument nor adduce any evidence for this supposition. Policies and regulations are not necessarily knee jerk reactions even if they appear so (Hood et al, 2001, p183).

In particular they do not consider the possibility that: (i) many people might be satisfied with a lower risk society and risk averseness is an entirely reasonable response to progress and modern industrial society. (ii) the 'regulatory spiral' can work in the opposite direction. Perceptions of the public and media of risk in some areas (eg, climate change or road safety) can be lower than the experts' views and regulation proves inadequate. In practice 'type I' (errors of regulatory commission) and 'type II' (errors of regulatory omission) errors can occur (Hood et al, 2001, p181). The BRC seems to be only concerned with type I errors and does not acknowledge the existence of type II errors.

The report stresses the negative aspects of a compensation culture and risk averse society yet little evidence of this is provided. They note for example, the House of Lords report in 2006 which stated that little evidence could be found of a compensation culture. This report noted that the 'total number of legal compensation claims, including claims dismissed and claims settled out of court, has in fact been falling over recent years' though there has been an increase in the value of claims from catastrophic injuries (House of Lords, 2006, p14). In 2000/01 there was a total of 612,000 claims and in 2004/05 579,000 claims. Despite this the idea of a compensation culture is still a key feature at the heart of the BRC's report.

***The BERR Investigation of the Health and Safety System, 2007-08***

This investigation initiated in 2007 is into the occupational health and safety system as it impacts on small businesses and employers whose risks are fairly low. It was set off with a

consultation document published in November 2007 and a final report is expected in Spring 2008 (BERR, 2007). The consultation document introduces by noting that British health and safety has been successful. The report states that outcomes have improved significantly since the 1974 Health and Safety at Work Act: “*work fatalities are down 76% and serious injuries down 68%*” (BERR, 2007, p9). It continues, “*by international standards the British health and safety regime has been especially successful*” but “*life inevitably involves some risk. Ill health and injury still occur with damaging and sometimes devastating consequences*”.

Despite the general success there are concerns for small and low risk businesses about the complexity of health and safety regulation. The HSC and HSE have taken many steps to attempt to simplify administrative burdens on small businesses and reduce the administrative costs. The purpose of the review is to consider “*what more can be done to deliver strong health and safety outcomes in a modern working environment while minimising the burden on business and maintaining the confidence of society*” (BERR, 2007, p9).

The review focuses on:

- an exploration of the health and safety regime from the perspective of small businesses including how it cumulatively impacts on them, what costs and burdens it imposes, what difficulties are faced in compliance and what behavioural changes it has driven;
- how the health and safety regime deals with new risks, especially health risks;
- the relative importance of the main drivers of costs and burdens on businesses;
- recommendations for priority areas for action without compromising health and safety.

**Main areas of focus of BERR review (BERR, 2007, p14):**

- general issues;
- perceptions of health and safety;
- drivers for better health and safety;
- information and advice;
- health and emerging risks;
- the impact of regulatory structures.

These led to ten questions in the consultation document (BERR, 2007, pp5-8):

- Do you believe the British health and safety system achieves the right balance between protecting workers, and the demands it places on employers and others?
- Are legal duties applying to the charitable and voluntary sectors sufficiently clear to support charitable and voluntary activities whilst protecting the people affected by them?
- Do you think the way the health and safety system is perceived by employers, workers and the wider public in Britain has a significant impact, eg, on accident rates, or on the way employers act?
- How can good health and safety management best be encouraged and recognised?
- Do you believe the fear of compensation claims has any influence on the way in which health and safety is managed? If so, how?
- What more, if anything, do you believe the government should do to ensure the employers have access to affordable, authoritative information and advice on health and safety?
- How can regulators best ensure that employers minimise ill-health that is caused or made worse by work?
- Do you feel that regulators’ targeting methods adequately reflect the risks of work in terms of ill-health, as well as injury?
- What improvements could be made to help HSE and local authority inspectors target rogue employers?
- Could more flexibility in whether HSE or a local authority regulates improve outcomes?

The consultation documents highlight two apparent dilemmas and contradictions of health and safety policy. First, the concern about the burden of regulation on small businesses might imply the need for more self regulation. However, supervised self regulation is at the heart of the health and safety regime since the 1974 act. Also many small businesses want certainty and clarity rather than the judgements and responsibility implied in self regulation: as one business owner said, *“we want to work with you [the HSE] ... just tell us exactly what to do and we’ll get it sorted”* (BERR, 2007, p19).

Second, there are some very different perceptions of health and safety regulation. Surveys indicate that protecting workers and the public is very important and *“health and safety is a priority area for action, both for businesses, and for citizens”* (BERR, 2007, p21). At the same time some sections of the media deliver frequent and often strident criticisms of health and safety policy and regulation. Although many of the stories are misleading and inaccurate they do indicate at the very least that there is discontent and concern about health and safety among parts of society.

### ***The Creation of the Risk and Regulation Advisory Council in 2008 and its Work Programme***

A significant recent development in the government’s approach to risk is the creation of the Risk and Regulation Advisory Council, a governmental advisory body under the auspices of the Department for Business, Enterprise and Regulatory Reform (BERR). This is driven by a governmental belief that *“policy making would benefit considerably from a fuller and more rounded consideration of public risk”*. A central question informing its work is *“when should the state manage a risk on behalf of everyone else and when should another body or individuals themselves be allowed to manage the risk?”* (BERR, 2008). RRAC is preceded by the ‘Better Regulation Task Force’, a Cabinet Office body set up to advise on efforts and initiatives involved in moving towards better regulation, and by the Better Regulation Commission, an advisory body which replaced the BRTF in 2005. The Better Regulation Executive, which replaced the Regulatory Impact Unit in the Cabinet Office in 2006, is now a permanent executive body within BERR with the task of driving the better regulation agenda forward.

The RRAC, proposed by the BRC, is the centre point of its proposal for the ‘next frontier of better regulation’ (BRC, 2008). This *“champions the vision of a policy making environment in which a sustained commitment to an evidence-based, high quality, flexible process leads to public risk being tackled in a systemic, targeted, and proportionate manner with good intentions leading routinely to good outcomes”* (BRC, 2008, p3). The BRC proposed that the RRAC would *“lead a new approach to key aspects of policy making ... and convene a Forum for specific topics which will then form a community of decision takers and stakeholders in respect of that topic, drawn from a wider network of people with expertise in risk and regulation”* (BRC, 2008, p3). An initial work programme which would engage with policy makers and external stakeholders (‘Better conversations inside government/better dialogue with the public outside’) in a process of *“experiential learning, moving away from the former model of published reports and recommendations”* (BERR, 2008).

The RRAC’s initial work programme will consist of a number of ‘work packages’ in four topics of risk and regulation (BRC, 2008). Four topics which are being considered are: food and superbug scares; animal disease outbreaks; under-pensioned citizens; and obesity (BERR, 2008). The first workpackage is focused on establishing forums for each of the four topics. The forums would operate primarily through ‘facilitated workshops’ in which risk

issues would be addressed “*with the objective of establishing broadly supported programmes of remedial action in areas where there is or may be a gap between desired policy intent and outcome*” (BRC, 2008, p8).

The workpackage which sets up the forum would be accompanied by a further five workpackages covering:

- Independent assessment of public risk perceptions;
- Public enrolment and engagement in the programme of public risk policy reprise and culture change via appropriate channels, including media, parliamentary engagement and academia;
- Training material provision for ministers and civil servants drawing on case studies and network established;
- Provision of rapid, independent counsel to ministers and policy-makers in high pressure situations upon request;
- Understanding and influence of the EU risk management agenda. (BRC, 2008, pp10-11).

While in many ways RRAC and its proposed programme draw on and develop the arguments of the BRC’s 2006 risk report, there appears a more balanced view of the issues in risk and regulation and a discernable shift towards the socio-political view of risk regulation. There is a greater recognition, for example, that there are inherent tensions in public risk regulation, the need for an element of equity as well as utilitarian cost-benefit efficiency maximisation, and that not getting it right can lead to inadequate protection of the public as well as overregulation, stifling initiative and individual responsibility. It would also “*start to address the public’s appetite for risk – trying to unpick the frequent dilemmas between a desire for protection but a rejection of nannying*” (BERR, 2008).

They note that “*the policy making process is often made all the more demanding by the need to seek views from and build consensus amongst a broad and diverse group of stakeholders and to understand fully options and trade-offs*” (BRC, 2008, p4). They continue “*where public risk is not correctly understood and managed, citizens (in general, but especially those who are already disadvantaged) are not properly protected from high risks*” as well as noting “*they are not enabled to take appropriate decisions themselves about risk; they do not experience the benefits of a more entrepreneurial and resilient society*” (BRC, 2008, p4).

The most significant aspect marking a more socio-political approach is the attempt to set up a social dialogue about issues in particular areas of public risk policy which is at the heart of the new process. The aims to involve ‘all key stakeholders, internal and external’ appears to amount to a shift towards a more inclusive and less top-down decision making process as opposed to “*relying solely on set-piece reports and formal recommendations*” (BRC, 2008, p5).

Despite this there are some indications that they have not fully taken on board some of the implications of a socio-political approach, for example, in relation to their take on risk perceptions. In their workpackages 2 and 3 on public risk perceptions and public engagement in risk policy, for example, there is little to indicate a more sophisticated view of the connections between objective and subjective risks, and the importance of the latter. The implication appears primarily to be that subjective risk is emotional and irrational and should not be an element of calm, considered and rational policy making. They note, for example, that they hope “*to offer an independent voice in contentious issues where is important that fact is separated from emotion as far as possible before embarking on the policy response.*”

*Often the perceived risk is dominated by the sense of outrage surrounding a relatively insignificant hazard*” (BRC, 2008, p10). This may well be true in some cases, but it ignores the important role that subjective risk and perceptions of risk play in risk policy making. Often ‘rational-scientific’ approaches take an overly utilitarian approach and fail to recognise the specifics of particular circumstances. Effects may disproportionately affect one group of society, differing perceptions of risk, such as familiarity or not, controllability, and voluntariness, can be strongly held perceptions of risk and entirely valid inputs into risk decision making.

### **Better Regulation and Impact Assessments in Decision Making**

Better regulation in principle is about regulatory quality. It is concerned with the clear articulation of the problems to be addressed, setting objectives and analysis of policy and regulatory solutions. The notion of better regulation emerged from the deregulatory initiatives of the 1980s (market liberalisation of key economic sectors) and early 1990s and from the increasing modern trend to use regulation and what seems to be the “*unabated construction of the regulatory state*”.<sup>52</sup> From this emerged an emphasis on regulatory quality, credible commitment to quality and the importance of a ‘whole of government level’ approach to regulation rather than ad hoc regulatory measures in areas of poor quality regulation (Baldwin, 2005; OECD, 2002, p23). Procedures for regulatory decision making emerged focusing on the problem and regulatory objectives, whether regulation is required and analysis of costs and benefits and ensuring the purposes of regulation are consistent and transparent to all those on whom it impacts. Principles including transparency, consistency, proportionality, targeting and accountability have been articulated to underpin better regulation and the regulatory impact assessment (RIA) (now Impact Assessment – IA) has been developed as the chief tool.

The IA is a tool designed to inform policy decisions and involves “*an assessment of the impact of policy options in terms of the costs, benefits and risks of a proposal*”.<sup>53</sup> It is to be applied to any governmental proposal that impacts on business, charities and the voluntary sector even if the recommended option is not regulatory. According to the Cabinet Office the IA process enables policy makers to: think through the full impact of the proposals; identify and assess alternative options; ensure a meaningful consultation process with a wide range of stakeholders is undertaken; inform EU negotiations; determine whether the benefits justify the costs; and determine whether particular sectors are disproportionately affected (Cabinet Office, 2003, p5). A risk assessment, ie, identifying the harm being addressed and the probability of its occurrence, also forms part of the IA.

Although this section focuses predominantly on impact assessments and regulatory policy making, it needs to be stressed that the IA and the principles of better regulation do not in themselves define the policy making process of government departments, agencies and regulators. These bodies have their own policy making procedures which in the case of agencies and regulators are particularly informed by the statutory requirements which apply to them as separate legal entities. The impact assessment and the principles of better regulation are only one set of requirements which are required to be integral to regulatory and policy making processes.

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<sup>52</sup> OECD (2002), Regulatory Policies in OECD Countries, From Interventionism to Regulatory Governance, OECD, Paris p22.

<sup>53</sup> Cabinet Office (2003), Better Policy Making: A Guide to Regulatory Impact Assessment, January, p5.

The IA is intended to be applied throughout the whole policy process from initial idea through to decision making, final outcome and monitoring and review (Cabinet Office, 2003, p10). It is part of a process of better policy making which inter alia comprises ‘evidence based policy making’, the key tool of which is the IA (Cabinet Office, 2003, p8).<sup>54</sup> The IA process involves three published documents which build on the previous one and emerge at different stages in the policy process. The initial IA should be produced when the policy idea is generated and provides the first formal statement and assessment of the idea. The partial IA builds on this and includes a fuller and more formal identification and assessment of the options and input from informal consultation with stakeholders and other government departments; it is also required as an input for collective ministerial agreement. The full and final IA is prepared after formal consultation with stakeholders and others; it is sent to parliament with the legislation to provide one of the key documents in the legislative process.

### *The NAO’s Evaluations of Impact Assessments*

The National Audit Office has undertaken extensive assessment of IAs in recent years. The reports provide both a wide ranging and detailed assessment of IAs and as such provide a substantial contribution to their development. In 2001 they published a report ‘Better Regulation: Making Good Use of Regulatory Impact Assessments’.<sup>55</sup> From 2004 they commenced an annual review of a sample of IAs. These reports, published in 2004, 2005, 2006 and 2007 are entitled ‘Evaluation of Regulatory Impact Assessments’.<sup>56</sup> The evaluations have focused particularly on the quality and practice of IAs. The NAO has also produced a report for the House of Lords Select Committee on Regulators on the IAs undertaken by the economic regulators.<sup>57</sup> **Appendix 6** provides a summary of the key conclusions for the main themes covered in the reports.

In general the conclusions indicate that there have been improvements in the practice of IAs since 2004 across most key areas but some are better than others. The consultation processes adopted in IAs are seen as the best area while cost benefit analysis is the area in which the NAO has the greatest concern. Compliance and enforcement are also very weak.

Perhaps one of the most difficult matters about IAs is how they fit into established policy making processes most of which are deeply embedded, complex and varied. The NAO’s reports have engaged with this at some length, for example, in 2007 (NAO, 2007a, pp17-24). IAs are intended to be integrated into and inform all stages of the policy making process from setting the agenda, through policy development, to implementation and evaluation. A particular problem, however, is that policy making is rarely a systematic and rational process: “*political influences and other environmental factors can interrupt the policy cycle at different stages and often adherence to the policy cycle will lapse following implementation*” (NAO, 2007a, p17). As a result they integrate into and inform the policy process in varying ways, some of which fall below the standards of the ideal IA.

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<sup>54</sup> Cabinet Office (2001), Better Policy Making, Report by the Centre for Management and Policy Studies, Cabinet Office, London, November.

<sup>55</sup> NAO (2001), Better Regulation: Making Good Use of Regulatory Impact Assessments, National Audit Office, London, November.

<sup>56</sup> NAO (2004), Evaluation of Regulatory Impact Assessments Compendium Report 2003-04, National Audit Office, London, March; NAO (2005), Evaluation of Regulatory Impact Assessments Compendium Report 2004-05, National Audit Office, London, March; NAO (2006), Evaluation of Regulatory Impact Assessments 2005-06, National Audit Office, London, June; NAO (2007a), Evaluation of Regulatory Impact Assessments 2006-07, National Audit Office, London, July.

<sup>57</sup> NAO (2007b), A Review of the Economic Regulators’ Impact Assessments - for the House of Lords Select Committee on Regulators, October.

Many IAs fall below the ideal standards of ‘integrated RIAs’ which are started early, inform policy making, are well resourced with good analysis (NAO, 2005, p3). Too many are either: ‘pro-forma RIAs’ which are started late, after the key decisions have been made and have no impact on policy and only done because of obligation; or they are ‘informative RIAs’ which are higher quality IAs and a useful information and communication tool but are also started late after key decisions and have limited impact on policy.<sup>58</sup>

The NAO recognise that the complexities of the policy process make achieving the ideal integrated IA a very difficult task. A particular problem is that policy and regulatory proposals are often intertwined with other policy initiatives and rarely self standing. These initiatives might, for example, be EU legislation which needs to be complied with or other policy commitments already made by the government (NAO, 2007a, p19). The role of parliament in the policy process is clearly crucial in a democracy but IAs have not been effectively integrated into parliamentary committees and debates (NAO, 2007a, pp19, 22).

#### Summary of NAO’s evaluation of IAs

- **Problem definition and policy objectives.** General improvement from 2004 when half of the sample did not contain a clear statement of objectives to 2007 when 15 out of 19 ‘provided a sound description of the problem, rationale for intervention and the objectives’.
- **Policy and regulatory options.** Alternative options, including do-nothing, are still not fully analysed. It is not fully clear that the preferred option emerged as a result of the IA analysis or was favoured for other reasons established earlier in the policy and regulatory process.
- **Consultation.** In 2004 “*consultation was generally the strongest element of the process in our sample*” (NAO, 2004, p21). Since then most consultations in the sampled IAs have been of good quality.
- **Costs and benefits.** In all evaluations better quantitative analysis could be undertaken. While quantitative uncertainty is one reason for the limited quantification more use should be made of range estimates and sensitivity tests (NAO, 2004, pp31-32). Also necessary to avoid spurious accuracy when single point estimates are used.
- **Compliance and enforcement.** One of the weakest in the evaluations. Some improvement since the early 2000s but in 2007 the majority of IAs did not consider issues of compliance and enforcement in any depth.
- **Monitoring, review and evaluation.** One of the weaker areas of IAs. In 2004 there was little in IAs on monitoring and review. By 2007 some improvement was evident but overall performance was described as ‘mixed’.
- **Risk and regulation.** The reports contain little on the analysis of risk in IAs. Risk is undoubtedly a difficult concept with multiple meanings nevertheless the limited consideration of it is rather surprising given that ‘risk-based regulation’ is supposed to be widespread.
- **IAs and policy making.** Many IAs fall below the ideal standards of ‘integrated RIAs’ which are started early, inform policy making, are well resourced with good analysis (NAO, 2005, p3). Too many are either: ‘pro-forma RIAs’ which are started late, after the key decisions have been made; or they are ‘informative RIAs’ which are higher quality but are also started late after key decisions.

<sup>58</sup> This point was supported in numerous off the record views given to authors by many policy practitioners.

### ***Over Emphasis on Quantitative and Technocratic Methods***

The better regulation organisations in government and the NAO have made a significant contribution to the development of IAs. The former, particularly in the specification of their mechanisms and general approaches and the latter, evaluating their implementation. However, there is evidence to suggest that these bodies have overemphasised the quantitative and technocratic aspects of IAs at the expense of a fuller and more qualitative decision process and proper consideration of other factors such as statutory duties.

There is particularly a pressure to quantify without proper consideration of the limitations of quantification. For example, in an IA checklist (Cabinet Office, 2003), in relation to risk assessment policy makers should “*describe and quantify the current situation*” without saying anything about what to do or offering practical guidance when the situation cannot be quantified in any meaningful way. When costs and benefits are analysed and there is uncertainty the only advice is to “*use estimates and ranges*”. The latter, however, can create certainty out of uncertainty and lead to a spurious impression of accuracy. It can also conceal difficult qualitative trade-offs that have to be made; in effect there are “*ad hoc political judgements masquerading as technocratic expertise*” (Hood et al, 2001, p184). An underlying assumption of using estimates and ranges is that the limitations of quantification are simply about techniques and technologies which can be worked on and improved. There is no recognition of the need to address what the quantification really means, nor what values and assumptions underpin the numbers, nor any extended guide as to how to approach qualitative analysis.

The NAO’s evaluations of IAs provide much worthwhile insight into their practice. However, they also do not fully consider the roles of quantification and qualification in the analysis of costs and benefits and the balance between these techniques. It is true that they recognise that the scope for precise quantification is often limited and qualitative analysis has a role to play. However, their recommendations often put the stress on more and better quantification rather than better qualitative analysis and the appropriate balance between the two.

The NAO’s encouragement of the use of ranges and sensitivity tests rather than point estimates illustrates this. Undoubtedly this indicates a recognition of the problems of spurious accuracy in point estimates and these techniques can improve analysis in the face of uncertainty and should be encouraged where appropriate. However, ranges in themselves involve quantification and do not properly address or overcome the limitations of quantification. When there is uncertainty, rather than describe possible qualitative methods they often just emphasise that ranges should be used (NAO, 2004, p30; NAO, 2005, p2), but this in itself might well involve false quantification of uncertainty. The stress on quantitative techniques over qualitative continues in later evaluations. In 2007, for example, they noted that departments “*should promote the importance of quantification and a renewed emphasis on analytical techniques*” but without a similar statement about qualitative techniques (NAO, 2007a, p6).

All of this raises two important matters which are not addressed in the NAO’s evaluations. Firstly, the IA should include an explicit decision process which establishes the sort of analytical techniques which are appropriate. The word ‘appropriate’ is often used by the NAO to describe the analytical techniques to be used but with little elaboration of what the appropriate technique is (eg, NAO, 2001, p11; NAO, 2004, p2). Judgements and decisions have to be made by departments on what is appropriate analysis.

Secondly, it is unclear what constitutes good qualitative analysis. For example, the NAO mentioned that some benefits could not be quantified in IAs but they did not say how qualitative analysis should be done (NAO, 2001 p27). An interpretation of this is that qualitative analysis is seen to be inferior to quantitative and only to be accepted when quantification is evidently not possible (NAO, 2004, p4). An alternative is to stress that qualitative analysis is different in kind from quantitative, to describe clearly what good qualitative analysis would be and to stress that in certain circumstances it is entirely appropriate and not just second best.

The important role of qualitative analysis in risk decision making needs to be stressed in IA guidance and their evaluation. It is not just a second best form of analysis undertaken when the data quality is not good. It is crucial in choices or trade-offs between different risk decision factors including efficiency and consistency versus equity and fair distribution; it also includes how qualitative factors such as catastrophic potential, and the extent control, voluntariness and familiarity in individual cases should influence risk decision making. Qualitative analysis is also crucial in risk assessment in the face of uncertainty, including judgements about how good any quantitative data may be, what the nature of the uncertainty is, and what principles, such as the precautionary principle, to adopt.

Interestingly regulatory practitioners such as Ofgem, ORR and the HSE address the need for qualitative analysis in impact assessments more explicitly than the better regulation bodies and the NAO. The ORR, for example, has observed that the governmental guidance (updated in 2007) on impact assessments has placed emphasis on cost-benefit analysis using quantitative techniques and has noted similar feelings amongst other economic regulators. The energy regulator, Ofgem, has distanced itself from an overly quantitative approach to impact assessments, particularly the approach advised by the Better Regulation Executive.<sup>59</sup> It notes that “*we do not propose to use the BRE’s template summary sheet on analysis and evidence. We consider that it places too much emphasis on quantified costs and benefits and overplays the likely role of CBA in Ofgem decisions given our statutory duties*” (Ofgem, 2007, p4). Later in the same document it notes that while quantitative analysis will be undertaken where appropriate, “*we will avoid spurious accuracy in any quantification where there is little reliable information or where there is considerable uncertainty*” (Ofgem, 2007, p25). Although not elaborated and illustrated at great length, Ofgem also addresses its use of qualitative analysis in impact assessments more explicitly than the NAO does in its evaluations of impact assessments (Ofgem, 2007, p25-27).

### ***Impact Assessments and Policy Making***

A number of questions can be made about the scope, process and ambitions of the IA in relation to policy making. Is it intended to be applied across the whole policy process from concept to review and across all or most policy areas? Is it appropriate for such a role? Or is it more suitable for the elements of policy making where choices between clearly delineated policies have to be made as opposed to when concepts, aspirations, objectives and approaches are considered? In broad terms, is the IA a tool of regulatory and administrative craft, or a process which shapes and informs the whole policy process?

There are arguments that IA techniques should have a more restricted application. It has been noted, for example, by a House of Lords select committee, there is “*a general view that*

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<sup>59</sup> Ofgem (2007), Proposed Revised Guidance on Impact Assessment, London. Office of Gas and Electricity Markets, December.

*considerations about the impact of legislation or regulation on personal liberties and freedoms should be regarded as part of the political process rather than as a matter for formal risk assessment procedures”* (House of Lords, 2006, p11). In a study on risk regulation regimes, Hood et al (2001, p181) argued that the techniques of better regulation and the IA are more appropriate for narrow ‘regulatory craft’ rather than for policy problems and regulatory regimes, particularly compliance (though this depends very much on the tractability of the issue and the extent to which it can be reduced to econocratic processes). More specifically, too much has been expected of the IA; it has not lived up to the ambitions nor is it appropriate. IA techniques are arguably also too focused on *ex ante* quantitative ‘econocratic’ analysis rather than *ex post* review of regime performance (Baldwin, 2005). The limitations of *ex ante* techniques are all the more significant in complex policy and regulatory regimes. Post-implementation review is recognised as necessary in the IA but not in practice it is not clear that it has been adequate (NAO, 2006, 2007).

There also seems to be an underlying assumption in the development of IAs that policy making in practice is a linear and sequential ‘staged’ process. However, the ‘stages’ model, although a convenient heuristic device, provides a limited and distorting view of practice.<sup>60</sup> Practice indicates a significant blurring and overlap between the stages and that policy, politics, administration and implementation are not separate discrete functions. Policy problems, solutions and the politics occur at different times and places, policy solutions can presage problems, while politics can pressurise government to do something when the problem is ill defined and there is no clear solution (Hood et al, 2001, pp182-183).<sup>61</sup> While undoubtedly the IA can be invoked at appropriate times and places it is questionable whether it as a linear and rational process can be effectively embedded on policy processes which are more ad hoc and sometimes chaotic. It is even more ambitious, if not hubristic, to suggest the IA can overcome these less rational features of real world policy making (Hood et al 2001, p183).

The NAO has presented some extended analysis of the relationship between IAs and the policy process, but it is not clear that they fully account for the vagaries of real policy making. They rightly note that policy making is not often linear sequential process in which IAs can nicely fit. And they note that some policies, notably those to comply with EU legislation, are, in large part, necessarily pre-formed (NAO, 2007a, p19). However, an assumption seems to be that this problem is simply a hurdle which can be overcome by departments trying harder to integrate the IA more fully into the policy process. They note that there has not been a ‘step change’ improvement in the integration of IAs into the policy process (NAO, 2006, p16), however, the difficulties might involve more than departments trying harder.

While there is undoubtedly scope for departments to try harder and particularly to overcome the impression that IAs are ‘retro fitted’, there are good reasons to believe that there are limitations to how far the IA can be fully integrated. The central problem is that the IA methodology assumes that a policy or regulation can be separated into a single discrete and rational process, but often they are highly contested and politicised and entangled with other policies and general approaches to policy making. The broader policy making and political process (in parliament for example) can also impose significant time constraints on policy making and thus the time and resources spent on IA development. The problem of the

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<sup>60</sup> Hill M (2005), *The Public Policy Process*, (4<sup>th</sup> ed), Pearson, Longman, Harlow, London, p21.

<sup>61</sup> Kingdon J W (1984), *Agendas, Alternatives and Public Policies*, Boston: Little Brown.

appearance of IA retro fitting might also be less tractable than thought because of connections to pre-existing or pre-accepted approaches to policy making, for example, the promotion of competition or the use of the private sector.

## **Decision Making Practice**

The stress on quantitative techniques by better regulation bodies and the NAO noted above are broadly in line with the argument put forward by Dodds that the initiatives by the UK's core executive in risk-based and better regulation in the last decade suggest a trend towards technocratic governance, a 'risk tolerant deregulation' and "*a prioritisation of political or scientific elites' views concerning risk*" (Dodds, 2006, p539). Technocratic methods of decision making stress consistency across different areas and the use of consistent value for life and other risk figures. The pursuit of economically efficient decisions using quantitative cost-benefit analysis is a central technique and is essentially utilitarian and central to technocratic methodology (Hermannson, 2005).

Interestingly regulatory practitioners are often more pragmatic and cautious about technocratic methods. For example, a central aspect of the HSE's approach is that, while quantitative techniques are used as widely as possible, it recognises their limits (HSE, 2001, p15). It notes that "*the evaluation of management of hazards are evolving to include values that cannot readily be verified by traditional scientific methods*" (HSE, 2001, p14). In particular, societal concerns and human values require judgement, cannot easily be reduced to numbers nor dismissed as the irrational concerns of the uneducated. Its key criteria for decision making are in addition to the utility based criterion (benefit of doing something in monetary terms compared to costs) are 'equity-based' (all individuals have the right to a certain level of protection); and 'technology-based' (satisfactory protection is attained when 'state of the art' control measures are adopted) (HSE, 2001, p41). The HSE also stresses the importance of expanding participation (HSE, 2004; HSE, 2001, pp18-19) and that trust in regulators is crucial and there should be greater openness and transparency in decision making.

Other regulators, eg, the EA, ORR and Ofgem follow a similar approach, though there are differences of emphasis. The rail regulator (ORR), for example, notes that while cost-benefit analysis is a useful way of informing decisions where costs and benefits can be robustly estimated, decision making is guided by the need to achieve statutory duties (Interview, ORR). This is partly for legal reasons: their statutory duties require them to undertake certain activities and strive for certain objectives one of which is the promotion of efficient and economy by those provided railway services. They also state that many decision factors cannot easily be monetised and input into cost benefit analysis leading to a wider role for consultation and qualitative analysis. The trade-offs between decision factors are made in the light of the consultation responses, the results of qualitative analysis and with a view to attaining the balance of statutory objectives that best promotes the public interest.

In a different kind of case, the Financial Services Authority has pursued quantitative techniques more than most regulators but has been forced to admit that it made significant mistakes in risk assessments, specifically over the problems of the bank, Northern Rock. As risks in the bank's business model increased, notably its dependence for around 70% of the funding for its mortgages from the international money markets, the FSA apparently did little to stimulate the bank to act to reduce the risk.<sup>62</sup> This might, of course, simply have been bad

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<sup>62</sup> Guardian (2008), Financial Services Authority admits it did not have a clue, London, March 27<sup>th</sup>, p27.

management on the part of the FSA. However, it does raise the question of whether the FSA over relied on rather formulaic and quantified risk assessment processes rather than assessment and qualitative analysis of risks in the changing global financial environment.

### ***Integration of Technocratic and Socio-Political Methods***

This critique of technocratic and quantitative methods appears to suggest that its polar opposite, the socio political approach should be adopted. However, as Hood (1996, p225) notes “*excessive reliance on dichotomies is dangerous*”. Describing two different approaches separately has the problem of making them appear polar opposites, particularly when some of the key tenets of each are based on criticisms of the other. It is nevertheless possible to conceive of an approach or approaches which draw on elements of both models in a mix which is dependent on the context. No single method is likely to be appropriate in a highly context dependent environment. In conditions of low consensus, low trust, high politicisation and trans-scientific knowledge (ie, no easy consensus amongst experts) elements of the socio-political model seem more appropriate (Hood, 1996, p226). Likewise in conditions of high trust and consensus, low politicisation and relevant knowledge limited to a small scientific area, a more technocratic approach has much to offer.

A sufficiently flexible framework to allow a more context specific and integrated approach will require, inter alia, “*the explicit recognition that hazard is a sociotechnical problem*”. A socio-technical system “*stresses the close interdependence between people and their social arrangements and the technological hardware they make and use*”.<sup>63</sup> Risk decision making and management should also include an “*articulation of the limits of models based on the attributes of function, form, grounding, specification and attributability*” (Blockley, 1996, p38). Also, while not rejecting scientific and quantitative techniques, the OECD stresses the importance of the human context of risk (OECD, 2003, p258). In relation to the management of systemic risk factors such as the need to “*develop risk awareness and a safety culture*” and to “*enhance dialogue and build trust*” are stressed (OECD, 2003, pp270-271)

Given that many of these debates and ideas have been held for at least two decades and are not significantly new, an important question is how they relate to contemporary systems of risk decision making, regulation and management. Better regulation and particularly the Impact Assessment procedure is a central theme of this report and thus it is worth considering how it fits with these approaches to risk decision making. The above critique of impact assessment in practice, particularly the overemphasis on quantification, suggests a review of impact assessments and risk decision making is required. The key question is how quantitative and more technocratic techniques can be effectively integrated with the qualitative and more socio-political processes and imperatives.

Addressing this question requires addressing a fundamental issue about impact assessment, which is what are its aspirations? Is the impact assessment (i) primarily a technique of regulatory and administrative craft? That is, a lower level policy technique separate from high level policy making and focusing mainly on an assessment of instruments, mechanisms and their implementation, rather than the general policy approach to a particular problem? Or is it (ii) something more ambitious, ie, concerned with aspirations, objectives and approaches to policy making process as well assessments of instruments and processes of implementation?

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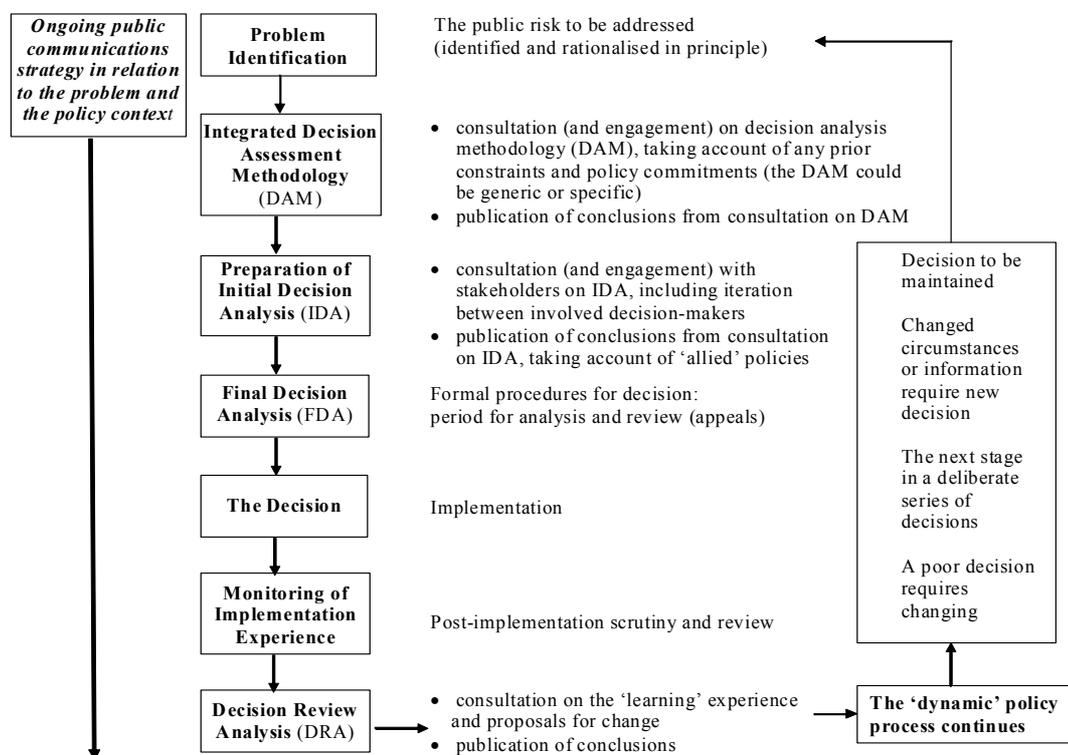
<sup>63</sup> Blockley D I (1996), Hazard Engineering, in Hood C and Jones D K C (eds), Accident and Design, Contemporary Debates in Risk Management, London: UCL Press, pp35, 38.

The answer to this question suggests different approaches to the integration of impact assessments into policy making. First, if it is agreed that impact assessments are primarily a low level policy mechanism then the current arrangements with incremental improvements should suffice. Impact assessments could remain a primarily quantitative process provided there are other clear and transparent qualitative decision processes and the way that impact assessments integrate into the decision process is made more explicit.

A second approach is to develop impact assessments into a more comprehensive and complete qualitative and quantitative decision analysis process. This suggests the need to change the name of the impact assessment, which in itself is suggestive of a lower level process, ie, assessing the impact of a policy that has been decided by some other process. A name which is suggestive of a more comprehensive process, such as decision analysis is proposed.

An integrated decision analysis process as outlined in **Figure 4** is suggested. This specifies decision documents to reflect the various key activities within the policy process. The diagram refers to decision activities in the policy process which for simplicity are depicted in a sequential way. It is not a direct representation of actual policy making and does not seek to represent it as sequential process nor to impose one. Actual policy making is suffused with iterative and parallel processes which the diagram attempts to show in simple form as well as processes of learning by analysis and experience.

**Figure 4: An integrated decision making process**



## 5. CONCLUSION

### **Risk and Risk Decision Making**

This report has focused on what the state can and should do in relation to risk in society, particularly on better regulation ideas and the institutions and processes that have become embedded in the modern 'regulatory state'. The report has been prompted by concerns expressed in some quarters that risk is not effectively handled by policy makers and the state. This was articulated notably in the report by the Better Regulation Commission in 2006 which argued that society and policy makers are excessively risk averse and this is leading to overregulation and the stifling of individual initiative and responsibility. This can perversely lead to greater risk as individuals become insufficiently resilient and thus more vulnerable and new ideas and innovations are not developed.

Although this dynamic of risk averseness and overregulation may be manifest in some cases, it is argued that excessive risk aversion in society and policy makers is not systemic. This does not mean that all is well. There are important questions about how the institutions and processes of the state should respond to risk. In particular how dilemmas are handled such as that on the one hand the increasing expectation that progress means risks and dangers should decline (as they have in many areas) and the reasonable expectation that the state plays an important role in this. On the other hand we live in a free society and it is reasonable to expect that the state's response to risk is not overbearing and overburdening.

One single parsimonious and internally consistent framework for approaching and resolving these issues is difficult to sustain. In particular, risk decision making is shaped by two contrasting views on the nature of risk, uncertainty and policy approaches by which the state should respond. One is labelled a 'scientific-technocratic' approach while the second is labelled a 'socio-political' approach. The key features of each of these are summarised in **Table 4**. These are, of course, simplified characterisations of arguments about risk and approaches to regulation and policy making and few would advocate one completely with a rejection of the other while few instances of actual regulation and policy feature all of one and none of the other.

In relation to these two approaches one theme of this report is the importance of synthesising elements of each approach. Indeed, not only is there an argument for synthesis, much actual policy and regulation reflects a synthesis, as do many statements by some governmental bodies such as those by the Cabinet Office and the HSE, though less so statements by the better regulation bodies and the NAO. This does not mean that all elements should be mixed together in some amorphous mass. In areas of low politicisation, high trust and consensus and where the relevant knowledge is drawn from clearly bounded scientific and technical arenas, the scientific-technocratic approach. Conversely in areas of high politicisation, low trust and consensus and where relevant knowledge derives from many areas and crosses many knowledge and professional boundaries elements from the socio-political approach are more appropriate.

Rather than pre-selection of a particular decision making approach (with all its attendant difficulties), it is argued that a flexible framework is required that enables elements of both approaches to be invoked where appropriate. This is particularly the case regarding decision making and Impact Assessments.

**Table 4: Notions of risk and risk decision making approaches**

	<b>‘Scientific-technocratic’</b>	<b>‘Socio-political’ (or ‘social constructivist’/‘socio-psychological’)</b>
<b>Risk and uncertainty</b>	<ul style="list-style-type: none"> <li>• Risk and uncertainty are separate concepts;</li> <li>• Risk can be derived from empirical data, quantified, probabilistic analysis undertaken;</li> <li>• Risk defined as ‘statistical expectation value of an unwanted event which may or may not occur’;</li> <li>• Uncertainty is when there is insufficient data and process knowledge to do probabilistic analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Risk and uncertainty blur and merge in most real situations;</li> <li>• There are limits to the usefulness of quantitative techniques;</li> <li>• Qualitative judgements of risk and uncertainty are required;</li> <li>• Judgements of significance of risk based on a variety of social, psychological and political factors as well as scientific and technical;</li> </ul>
<b>Subjective and objective risk</b>	<ul style="list-style-type: none"> <li>• Subjective and objective risks are separate;</li> <li>• Objective risk exists ‘out there’ separate and distinct from that in people’s minds;</li> <li>• Subjective or perceived risk is in people’s minds and can be very different from objective reality</li> </ul>	<ul style="list-style-type: none"> <li>• Subjective and objective risk interact;</li> <li>• Objective risk can be affected by subjective risk;</li> <li>• Subjective and perceived risk, even when different from objective risk, can be as valid an input into deciding how to respond to risk.</li> </ul>
<b>Risk-based regulation and policy making</b>	<ul style="list-style-type: none"> <li>• Key decisions made by governmental experts;</li> <li>• Outside input limited mainly to scientific and technical experts;</li> <li>• Stress on ‘utilitarian approach’ ie, quantitative techniques for risk assessment and economic cost-benefit analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Stress on qualitative techniques which recognise different kinds of understandings of risk and value placed on responding to it;</li> <li>• Democratic decision processes, ie, made by ministers with inclusion and dialogue with a wide range of differing actors;</li> <li>• Stress on a rights, societal concerns, and perceptions of risk.</li> </ul>
<b>Areas of applicability</b>	<ul style="list-style-type: none"> <li>• Low politicisation;</li> <li>• High trust;</li> <li>• High consensus;</li> <li>• Relevant knowledge from clearly bounded scientific and technical arenas.</li> </ul>	<ul style="list-style-type: none"> <li>• High politicisation;</li> <li>• Low trust;</li> <li>• Low consensus;</li> <li>• Relevant knowledge derives from many areas and crosses knowledge and professional boundaries.</li> </ul>

### **Case Examples**

Throughout this report cases of risk regulation have been briefly cited to illustrate particular issues in risk and risk regulation. A key theme is the variety of different factors which impact on different cases. Cases vary hugely from the global problem of climate change to much more localised ones such as transport safety or the safety of gas installations. We have found no easy way of categorising the cases in order to enable a single parsimonious framework to be applied to each category.

**Table 5** provides an overview of the various factors which impact on risk regulation and policy in some of the cases cited in the report.

### ***Problem, Risk and Uncertainty***

Problems vary hugely from potential global catastrophe to risk of death and injury and to the blight on lives and health caused by obesity, smoking and drinking alcohol. The balance between, and the merging and overlapping of risk and uncertainty also vary greatly. In some areas, such as climate change, the uncertainties are huge (at least about the extent and impacts of global warming if not whether it is happening). In other areas such as transport safety there is less uncertainty due to many decades of data from transport systems. Nevertheless a degree of uncertainty remains in many areas including transport, for example, on new traffic systems and exactly how people behave in response to them.

### ***Perceptions and Understandings; Culture and Attitude***

Perceptions and understandings of risk also vary hugely between areas. There is particularly often a significant difference between expert opinion and public opinion. While the public are often thought to be excessively risk averse (and hence have higher perceptions of risk than experts) eg, GM foods or nuclear power, many examples can be invoked to illustrate the opposite, eg, climate change, smoking, drinking and road safety. There are also difficult questions in the relation between understandings of risk (and associated policy making) and culture and attitudes. Risk differentials between experts and public might be because of embedded cultures and attitudes (eg, the consumer society in relation to climate change or the culture of binge drinking). In such circumstances how should decision makers act? With command and control to impose behavioural change? With information and education campaigns to change attitudes? Or perhaps they should engage more directly with society to learn and understand from experience what motivates people, what they want and how best to slowly change cultures and attitudes.

### ***Key Decision Making Factors and Policy Issues***

One key decision factor which pervades many issues is individual liberty versus the public interest, public good or public health. An ideal benchmark to work from is that liberty should be constrained only when there are effects of actions on second or third parties (ie, when there is possible harm to others). This is an important principle which should not be dismissed easily. Nevertheless it has limitations. First, in integrated modern societies the actions of one person very often have effects on others even if indirect. Binge drinking, motor bike riding and rock climbing are activities in which the risk is borne mostly by the first party. But their actions can seriously disrupt others as well as placing greater burdens on publicly provided health care services. Second, in the 20<sup>th</sup> century a political culture of 'social liberalism' has developed in which the state is expected, to some extent, to promote and develop individual health and well-being in order to foster a better society. This can be criticised as paternalistic, but it is deeply rooted in our culture.

Another key decision factor which pervades many issues is the extent to which decisions can be and should be based on marginal cost-benefit analysis versus other factors such as equity and fair distribution, degree of individual control and familiarity, and catastrophic potential (leading to invoking the precautionary principle). These latter factors vary greatly between issue areas but generally can lead to significant divergences from the standard marginal cost-benefit model.

**Table 5: Summary of key factors in a range of different risk regimes**

<b>Case</b>	<b>Problem and risk</b> <b>Risk and uncertainty</b>	<b>Perceptions and understandings of experts and public</b>	<b>Key decision factors and policy issues</b>
<b>Climate change</b>	<ul style="list-style-type: none"> <li>• Potential catastrophe: huge damage to biosphere, ecosystems etc;</li> <li>• Uncertainty about climate science, particularly the extent of temperature rise, uncertainty about impacts on ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: most agreed it is huge problem;</li> <li>• Public: ignorance, complacency and lack of concern widespread</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptation and/or mitigation?</li> <li>• Learn-act or act-learn?</li> <li>• Precautionary principle;</li> <li>• Problem global and diffuse across industry and society;</li> <li>• Potentially huge costs in transition to low carbon infrastructure and society;</li> <li>• Developing world aspiring to high carbon lifestyles</li> </ul>
<b>GM foods</b>	<ul style="list-style-type: none"> <li>• Need to feed up to 10bn people in 21<sup>st</sup> century;</li> <li>• Risk of damage to ecosystems by GM crops</li> <li>• Uncertainty about population growth;</li> <li>• Uncertainty about impact of GM foods on ecosystems and biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• Industry-science experts: believe GM foods are proven to be safe;</li> <li>• Environmentalists – concerned about impact on ecosystems and biodiversity;</li> <li>• Public: general ignorance and some concerns about ‘Frankenstein’ foods</li> </ul>	<ul style="list-style-type: none"> <li>• Pressure on food prices, food supply and poverty versus concerns about impact on environment;</li> </ul>
<b>Nuclear power</b>	<ul style="list-style-type: none"> <li>• Catastrophic potential over a wide area (Chernobyl);</li> <li>• The need to store highly radioactive materials for thousands of years;</li> <li>• Much statistical evidence of failure rates of components and systems;</li> <li>• But some uncertainty: are all processes fully understood? What about long term storage of dangerous waste?</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: risk of major accident tiny but long term storage problem not solved;</li> <li>• Public: some scepticism (Windscale, Three Mile Island, Chernobyl accidents and cancer clusters), but some, particularly those living near nuclear plants accept that risk is low</li> </ul>	<ul style="list-style-type: none"> <li>• The need for risk to be practically zero</li> <li>• A possible contribution to low carbon energy production and energy security</li> <li>• Concerns about costs, particularly when the whole cycle is considered</li> </ul>
<b>Road and rail safety</b>	<ul style="list-style-type: none"> <li>• Death and serious injury on road or rail.</li> <li>• More spent per life saved on rail than road;</li> <li>• Extensive statistical data from over a century of road and rail experience mean uncertainty is low;</li> <li>• But some uncertainty in new traffic systems, road vehicles or trains</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: suggest that it is irrational to spend hugely more on saving life on rail than on road;</li> <li>• Public: in abstract accept expert view; but in practice more concerned about a single big train crash than a series of smaller crashes on road with same overall effect</li> </ul>	<ul style="list-style-type: none"> <li>• Societal concern about train crashes – seen as public service, once on train it is non-voluntary and passengers have no control;</li> <li>• Road transport more control and actions such as dangerous driving more voluntary</li> </ul>
<b>Seat belts</b>	<ul style="list-style-type: none"> <li>• Risk of death and serious injury on road</li> <li>• Statistics indicate with some certainty that seat belts save lives;</li> <li>• But seat belts can change behaviour, uncertainty about the impact on other road users.</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: believe on basis of statistics that seat belts save lives;</li> <li>• Public: increasingly accept expert view but earlier they were more complacent, particularly about back seat belts</li> </ul>	<ul style="list-style-type: none"> <li>• The need to save lives versus individual liberty;</li> <li>• Why should the state force people to do something which has little effect on others?</li> <li>• Relatively straightforward to equip cars with seat belts.</li> <li>• Compliance high</li> </ul>

<b>Gas pipes close to buildings</b>	<ul style="list-style-type: none"> <li>• Risk of gas leakage and explosion near a building and risk of injury to people in building;</li> <li>• Too much spent on pipes per life saved?</li> <li>• Some debate on the certainty about statistical probability of gas explosions</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: risk of death or serious injury is low</li> <li>• Public: perceive the risk to be higher than experts</li> </ul>	<ul style="list-style-type: none"> <li>• Public demand means higher than standard amounts spent on risk prevention</li> </ul>
<b>Gas holders</b>	<ul style="list-style-type: none"> <li>• Risk of leakage and explosion near residential areas;</li> <li>• Low probability but potential for local catastrophe</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: risks are low but there is potential for catastrophic accident</li> <li>• Public: familiarity and almost no serious accidents mean public perceive the risk as very low</li> </ul>	<ul style="list-style-type: none"> <li>• Catastrophic potential and need to ensure public confidence is not lost means higher than standard amounts spent on risk prevention</li> </ul>
<b>Flooding</b>	<ul style="list-style-type: none"> <li>• Risk of flooding in many built and populated areas;</li> <li>• Large disruption and big clean-up costs</li> <li>• Uncertainties about future climate mean statistical probabilities of flooding are uncertain;</li> <li>• Limitations about flood models mean flood impacts are uncertain</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: concern about increasing probability of floods in future;</li> <li>• Public: increased frequency of major flooding events leads to scepticism that flood defences are adequate</li> </ul>	<ul style="list-style-type: none"> <li>• Costs of flood defences</li> <li>• Pressure for new houses may mean building on flood plains thus exacerbating the problem (too many people?)</li> </ul>
<b>Water fluoridation</b>	<ul style="list-style-type: none"> <li>• Risk of poor and rotten teeth particularly those with poor diets and oral hygiene;</li> <li>• Possible side effects of putting fluoride in drinking water?</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: water fluoridation an effective way of improving dental health, side effects risk very low</li> <li>• Public: concern about 'enforced medication' and possible side effects</li> </ul>	<ul style="list-style-type: none"> <li>• Individual freedom versus public health;</li> <li>• Costs compared to education campaigns to get small number of public to improve oral hygiene</li> </ul>
<b>Drinking water standards</b>	<ul style="list-style-type: none"> <li>• Risk of significant damage to health of many people if water is polluted or not treated properly</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: high standards required even though far higher than standard willingness to pay and value for life</li> <li>• Public: desire for near zero risk, one serious incident may lose confidence in experts and industry</li> </ul>	<ul style="list-style-type: none"> <li>• Need to maintain public confidence means higher than standard risk prevention;</li> <li>• How long can this model be maintained, given high costs and increasing water supply problems in some areas?</li> </ul>
<b>Binge drinking; obesity; smoking</b>	<ul style="list-style-type: none"> <li>• Risk of serious health damage;</li> <li>• Harm to others: violence in city centres; passive smoking;</li> <li>• Burden on public health care.</li> </ul>	<ul style="list-style-type: none"> <li>• Experts: a long term public health problem;</li> <li>• Public: pleasures outweigh risks, denial of problem until it is overwhelming.</li> </ul>	<ul style="list-style-type: none"> <li>• Individual freedom versus public health (of first second and third parties);</li> <li>• Embedded within culture - limited impact of education campaigns or other initiatives</li> </ul>

## **Risk Decision Making and Impact Assessments**

Recognition of the need for a flexible framework which allows the appropriate methodology and approach to be adopted is crucial. A central argument developed in this report is that too often there is an inappropriate and flawed aspiration towards aspects of the scientific-technocratic approach, particularly quantitative techniques. This is particularly manifest in the development and practice of IAs. In IAs themselves, governmental statements about their use and evaluations there is firstly a pressure to quantify as much as possible without stressing the limitations and flaws (notably spurious accuracy, unstated and unexplored qualitative assumptions that underpin the numbers). The NAO mention some of the drawbacks of quantification, such as the use of fixed numbers in highly uncertain areas and their encouragement of the use of ranges and sensitivity tests is important and worthwhile. However, ranges in themselves involve quantitative estimates and can also lead to impressions of spurious precision and do not address the qualitative issues that underpin estimates.

It is evident in the IAs and in their guidance and evaluations that qualitative techniques are not effectively or fully explored. Governmental statements on IAs say little about how and when they should be used. The process with which it is decided when quantitative techniques and qualitative techniques are used as well as the quality and methodology behind such techniques is particularly important. After all many important policy and regulatory decisions are based on trade-offs between incommensurables, such as between economic efficiency and equity, between equity and protection of the environment, or between individual rights and collective economic welfare.

Two matters need to be addressed in the guidance for the production of IAs and their evaluation:

- Firstly, the IA should include an explicit decision process which establishes the sort of analytical techniques which are appropriate. Judgements and decisions have to be made on what is appropriate analysis but current guidance provides no assessment or guidance of those judgements and decision processes.
- Secondly, the guidance and evaluation should address what constitutes good qualitative analysis. They have often noted that some benefits cannot be quantified but not how qualitative analysis should be done. An alternative is to stress that qualitative analysis is different in kind from quantitative, to describe clearly what good qualitative analysis would be and to stress that in certain circumstances it is appropriate and not just a second best.

It is particularly important to stress that qualitative analysis is not just a second best form of analysis undertaken when the data quality is not good. It is crucial in choices or trade-offs between different risk decision factors notably between efficiency and equity, but also how qualitative factors such as catastrophic potential, and the extent to which individual control, voluntariness and familiarity in particular cases should influence risk decision making. Qualitative analysis is also crucial in risk assessment in the face of uncertainty, including judgements about the quality of quantitative data, what the nature of the uncertainty is, and the principles to adopt such as the precautionary principle.

Interestingly our research has indicated that regulatory practitioners, notably the independent economic regulators and the HSE, recognise the limitations of quantification more explicitly

than the better regulation bodies and the NAO. The former also appear to address qualitative analysis more directly and the balance and interaction between qualitative and quantitative analysis (without suggesting that they have got the perfect balance). This appears to reinforce the argument that the better regulation bodies and the NAO have to address this issue more fully.

There are also important question about IAs and their role in relation to policy making and regulatory decision making processes. It should be noted that the IA and the principles of better regulation do not in themselves define the policy making process of government departments, agencies and regulators. These bodies have their own policy making procedures but in the case of agencies and regulators statutory requirements apply to them as separate legal entities. Ostensibly (according to governmental statements) IAs are intended to be integrated into and inform the whole decision making process. However, the NAO's evaluation reports testify that few IAs live up to that aspiration; many are undertaken retrospectively or are only partially integrated into the key earlier phases of decision making.

One argument is that the ambitions of the IAs are too great and that they should be limited to a more modest role of undertaking technical analysis (often quantitative) of particular options. The earlier and more qualitative matters, such as problem identification, statement of objectives, analysis of trade-offs between different objectives and possible policy approaches, should explicitly be part of other processes, such as in government departments, green and white papers, reviews and strategy papers, all of which are in any case part of the policy process irrespective of impact assessments. The terminology 'impact assessment' in itself gives the impression of partiality, ie, analysis which follows the problem, objectives and approach, rather than being an integral part of it. Another problem with full integration into the policy process is that the IA process is in itself a discrete and bounded process, whereas policy making and often regulatory policy are not discrete and separate from other areas. Existing policies and policy approaches often define and constrain the objectives and options in relation to one particular decision and IA.

This suggests two possible approaches to IAs:

- The ambition of IAs is downgraded to one of analysis of the impact of options which have emerged from an earlier and separate processes including problem identification, setting objectives and deciding the overall approach or possible approaches. In particular the IA is invoked in areas where quantitative analysis is particularly appropriate and has significant utility.
- The ambition of IAs continues to be one of full integration into the process. In this case the importance and the nature of qualitative techniques needs to be stressed much more than hitherto. In particular, it needs to be emphasised that qualitative techniques will very often be central elements in many aspects of IAs and that, while they are different and yield different and less rigid knowledge, they are not secondary or inferior.

We suggest that the second approach to IAs is more suitable. Whichever is chosen, however, it is clear that significant questions about the IA in the risk decision making process need to be addressed.

## APPENDIX 1

### RISK IN UK ADMINISTRATION AND REGULATION

The Hampton Review, *Reducing Administrative Burdens: Effective Inspection and Enforcement* (Hampton, 2005), noted that the use of risk-based regulation was patchy and stressed the importance of adopting risk-based approaches across all regulatory areas. Risk assessment is seen to be an essential element of regulation and but Hampton concludes that it is not undertaken comprehensively nor consistently. It notes that “*36 of the 63 national regulators in the review’s scope use some sort of risk assessment. Only 25 of them, however, include an explicit element of earned autonomy, where good performers are visited less often, or have less onerous reporting requirements*” (Hampton, 2005, p4).

The discourse of risk-based regulation has become embedded in the practice of many sectoral regulators and there are varying degrees which they aspire to the ‘scientific’ approach which risk-based regulation seems to imply. One of the most explicit areas in which risk-based regulation has been promulgated is the regulation of financial services by the Financial Services Authority.<sup>64</sup> The approach involves assessing the risk (using quantitative data as much as possible – producing ‘an overall risk score for each firm’) related to firms in the sector and basing the intensity of regulatory intervention on the level of risk. The General Medical Council has also increasingly stressed the need to move to risk-based techniques in the regulation of medical practice.<sup>65</sup> Risk-based techniques are also central to the approach of the Health and Safety Executive, though as described they explicitly the need to incorporate recognise varieties of risk and ‘subjective’ risk and to engage with key stakeholders in the decision making process (HSE, 2001). The Environment Agency is another regulator which emphasises risk as a key feature in ‘modern’ regulation along with other features such as polluter responsibility, trust-based, proportionate, cost-effective and outcome focused.<sup>66</sup> Just how much all these aspirations towards risk-based regulation are (futile) attempts at objective regulation cannot be answered without detailed study.

While the prima facie case for risk-based regulation appears self evident, in practice it appears to represent an attempt to shift towards a scientific view of risk. This is beset with the problems and limitations of quantification discussed above. In relation to the quantitative techniques used by the FSA Hutter (2005), for example, notes that “*the apparently ‘objective’ probability factors incorporated in the FSA’s approach to risk are subjective and there are no developed measures presently available which could give a shared objective quantity*” (p8). The subjectivity is often due to value laden judgements about aspects of sectors, such as financial services. The recent Northern Rock crisis, for example, appears to have been caused by excessive confidence in international inter-bank lending to supply funds for the domestic mortgage market. “*Objective risk techniques offer a kind of legitimacy in that regulators can appeal to seemingly objective models*” (Hutter, 2005, p13) but this might be spurious and might be seen as a kind of blame shifting, taking refuge in objectivity and not facing up to the real and difficult qualitative issues. Major crises often test the robustness of regulatory models and their legitimacy: in the Northern Rock case, there is widespread scepticism about

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<sup>64</sup> Speech by M Foot of FSA, December 2000.

<http://www.fsa.gov.uk/Pages/Library/Communication/Speeches/2000/sp69.shtml>

<sup>65</sup> GMC (2005), *Developing Risk-based Regulation*, Progress Report. London, General Medical Council, September.

<sup>66</sup> Environment Agency (no date), *Delivering for the environment. A 21<sup>st</sup> century approach*, Environment Agency.

the regulatory model which includes the FSA, Bank of England and the Treasury. Quantitative risk-based tools undoubtedly have something to offer in the appropriate circumstances. There are dangers, however, in stubborn adherence to them, in the belief that in areas of difficulty more sophisticated and complex quantitative techniques are required. Rather than developing more sophisticated qualitative approaches which include addressing different understandings of risk and the varying values that can result in significant variations between different kinds of stakeholders.

In the Hampton review a scientific view of risk appears to predominate. For example, on the 'best risk assessment' the report notes that risk assessment should inter alia be "*expressed simply, preferably mathematically*" and that:

"Data should not be included in the risk assessment unless there is evidence that the presence of the accreditation or certification has a material effect on the regulatory outcome being examined. The judgement on whether a piece of information is material or not should be based on the objective reliability of the information, rather than a subjective assessment of its accuracy in particular cases" (Hampton, 2005, p31).

The review does not deny that subjective judgements will be required but this appears limited and grudging. "*There will always need to be scope for some subjective judgement in the assessment – on the quality of management systems, for example – but subjective judgements should inform, not dominate the risk assessment*" (Hampton, 2005, p31). Difficult questions about how to deal with the limits of quantitative techniques, different understandings of risk, different responses to risk from different groups of people and how these affect the nature of risk itself, the need for trust and legitimacy in risk regulation are not properly addressed. The report also seems to assume that risk assessors are somehow neutral arbiters of risk.

## APPENDIX 2

### CONCEPTIONS OF RISK AND UNCERTAINTY

The word risk is commonly used across modern life; it features centrally in the decisions and actions of individuals and in recent decades has emerged as a fundamental social and political issue (Kemshall, 2002, p3; Taylor-Gooby and Zinn 2006, p3). “*Risk is to do with uncertainties: possibilities, chances or likelihoods or events, often as consequences of some activity or policy*” (Taylor-Gooby and Zinn 2006, p1). Risk is also commonly associated with hazards or negative outcomes. A risky action (of an individual, organisation, or public body) is normally perceived as a hazardous one (Smith and Toft, 1998; Hansson, 2007). Risk, however, can also be seen as a neutral concept, involving the possibility of positive as well as negative outcomes and experiences (Lupton, 1999, p8). Indeed, although the negative view dominates in modern discourse – risk is often synonymous with danger and to be avoided – a stress on the positive elements of risk is not absent and appears, for example, in economic and financial speculation, ‘extreme sports’ and adventures (Lupton, 1999, pp148-172). As well as making one richer, risk taking can lead to a self realisation and authentication, a heightened sense of self beyond everyday norms and government and societal controls (Lupton, 1999, p154).

The emphasis on the negative side of risk is a modern view and a reflection of the changing meaning of the word over the centuries (Lupton, 1999, p8). In the Middle Ages risk was associated with ‘fate’, ‘destiny’ and ‘acts of God’, that is, they were beyond human understanding and control (Lupton, 1999, p5; Kemshall, 2002, p4). Seventeenth and eighteenth century Enlightenment thinking shifted the meaning towards a determinist view of outcomes, ie, they were based universal laws and causality (Kemshall, 2002, p4), implying human understanding and control was possible. This formed the basis of a modernist view which draws on scientific and technical knowledge and particularly the development of statistical techniques to enable probabilities to be calculated and a statistical predictability to be ascribed to outcomes (Lupton, 1999, p6).

#### **‘Scientific’ Risk**

Although risk is often inextricably linked with uncertainty, the scientific view sees risk and uncertainty as two different concepts. In a classic work by Frank Knight (1921) risk is associated with circumstances in which the probability of particular outcomes is known or knowable whereas uncertainty is when outcome probabilities are not known or not knowable (Lupton, 1999, p7). Probabilities are derived from empirical data from particular circumstances and can be used to calculate the probability of particular events from occurring in similar circumstances. Thus, for example, the probability of an accident in a given period of time on a particular road is calculated from the number of previous accidents on the same road or similar roads. In complex technological systems, such as nuclear power stations, the probability of accidents can be calculated from empirical data on the failure rates of constituent components and systems. Thus an important dimension of modern risk analysis has become highly mathematical with claims of high predictability in the aggregate, though not of course for individual events.

In this vein of thinking a standard technical view of risk has developed and can be defined as “*the statistical expectation value of an unwanted event which may or may not occur*” (Hansson, 2007). The ‘expectation value’ is the probability of the occurrence of the unwanted event multiplied by its severity. The severity of the consequence might be, for example, the

number of people killed in an accident. Risk is thus the statistically expected number of deaths associated with potential accidents. It is a standard view of risk adopted by and informing many public policy practitioners (Smith and Toft, 1998).

In this view, the idea of uncertainty is different from risk in that probabilities are unknown and possibly unknowable and incalculable. Uncertainty refers to circumstances and events in which there are insufficient empirical data to develop formal and scientific means of calculating the probability of outcomes. For example, there is often much empirical data associated with established types of financial investments (stocks, shares, bonds, bank deposits etc) and probabilities can be ascribed to these but new, unique and speculative investments (eg, in a new technology) are uncertain because of the lack of data. Of course, under uncertainty, qualitative judgements based on informed experience or vague hunches can and are made, but there are no means on which quantitative outcome probabilities can be calculated. This view of the difference between risk and uncertainty can be useful in decision theory and analysis (Hansson, 2007) and is often a basic assumption taken in formal scientific and economic modelling, for example, that associated with the climate system in the Stern review on the economics of climate change.<sup>67</sup>

In this scientific view, risk is objective, that is it exists ‘out there’ separate and distinct from people, the subjects of risk. Subjective or perceived risks are risks in the minds of the people subject to risk and can be and often are very different to objective risks, for example, some people consider flying to be more dangerous than travelling by road transport whereas objective statistics show the converse. Subjective risk is a complex social and psychological issue not easily reducible to the mathematics of modern risk science (Hansson, 2007). Advocates of the scientific view tend to do little more than tolerate the subjective view of risk seeing it as little more an irrational personal, social or political phenomenon. The objective of policy makers should be to communicate, inform and educate people to see beyond these irrationalities towards real risks.

### **The Limitations of Scientific Risk: The ‘Social Constructivist’ View**

Needless to say there is a wide ranging literature which criticises the scientific view of risk and has a very different view of the key tenets discussed above. The first problem with the scientific approach is that the idea that there is a clear distinction between risk and uncertainty. A key problem of the modernist approach is what has been termed the ‘myth of calculability’ (Kemshall, 2002, p5). Key analysts on risk such as Beck and Giddens characterise post-modernity by “*global risks, indeterminate and contingent knowledge about the probability of such risks, and uncertainty over future outcomes and impacts*” (ibid).

Indeed the scientific basis for quantifying probabilities of outcomes beyond strictly controlled and simple actions such as rolling of dice or tossing coins can be questioned (Hansson, 2007). Beyond these current circumstances and actions will always differ in some way from previous ones (from which probabilistic data is derived) and therefore outcome probabilities cannot be ascribed with certainty. This suggests there are significant limitations to analytical models and indeed Keynes argued, for example, that statistical methods of economic forecasting were fundamentally flawed as they were based on uncertain knowledge (O’Malley, 2004, p4). Risk therefore “*is not reducible to the product of probability or*

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<sup>67</sup> Dietz, S, Anderson D, Stern N, Taylor C and Zenghelis D (2007), Right for the Right Reasons, A Final Rejoinder on the Stern Review, World Economics, 8:2, p231.

*occurrence multiplied with the intensity of scope of potential harm” (Adam and van Loon, 2000, p7).*

In practice, risk and uncertainty merge together, they “*blur, converge and overlap*” (O’Malley, 2004, p18). Most formal analyses of risk require that credible empirically based quantitative probabilities of model components be known and input into analytical models. In practice, however, “*such numbers are rarely available, they are usually assumed or invented, the alternative being that admit that formal treatments have nothing useful to say about the problem under discussion*” (Adam, 1995, pp25-26).

An example of the blurring of risk and uncertainty is in the IPCC’s summary of climate science (IPCC, 2007, p3).<sup>68</sup> They state that they use terms to indicate assessed likelihood of outcomes such as ‘virtually certain’ meaning probability of occurrence greater than 99%, ‘extremely likely’, greater than 95% and ‘very likely’ greater than 90%. They also draw on a quantitative scale for the ‘levels of confidence’ in the science, for example, ‘very high confidence’ indicates a 9 out of 10 chance of being correct, ‘high confidence’ an 8 out of 10 chance. While these figures are clearly meant only to be indicative and provide an aid to understanding, they do not indicate quantitative probabilities. No quantitative probability can be ascribed to the chance of a new scientist overturning received wisdom, or more realistically, scientific wisdom changing slowly but distinctly in the wake of new ideas and evidence.

There are complex varieties or ‘configurations’ of risk and uncertainty (O’Malley, 2004, p18). Configurations vary significantly, for example, from ‘insurance risk’ (spreading of risk), to ‘clinical risk’ (risk factors and treatments of individuals) and ‘epidemiological risk’ (risk and harms to general groups or populations) (O’Malley, 2004, pp21-23).<sup>69</sup> Though a huge simplification, a continuum of risk and uncertainty can be conceived. At one end are areas where the probabilities are known with a high degree of certainty (described as ‘trivial’ by Adams, 1995), somewhere in the middle are areas of uncertainty in which we can make informed judgements based on experience, at the other end are those areas in which we have little idea of the outcome (O’Malley, 2004, p19). This all suggests that limitations to the underlying assumption in the shift to risk regulation that risk can be governed in a probabilistic and rather mechanistic way. More nuanced strategies of governance are required which at least recognise the varieties of risk and uncertainty and that qualitative as well as quantitative judgements are almost always required.

### ***Subjective and Objective Risk***

Another important critique of the scientific view is that subjective risk is much more than an irrationality held by some which can and should be overcome by good communication and education. The dismissal of perceived risk as irrational ignores the possibility that subjective risk can make as much sense as objective risk (Lupton, 1999, p106). While those taking the scientific view see perceived risk as unreal and as existing only in the minds of subjects, those who stress the importance of subjective risk argue that they derive from different knowledges of the world and approaches to life each of which have their own valid logic and

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<sup>68</sup> IPCC (2007), Fourth Assessment Report, Working Group I, Summary for Policymakers, Intergovernmental Panel on Climate Change.

<sup>69</sup> Probabilistic techniques are well established in insurance implying that uncertainty plays little role. Yet uncertainty pervades the insurance business just like most other businesses as many Lloyds names found out in the early 1990s: they incurred unexpected and significant losses. Rather than partaking in a knowable risk they had “*signed up for the uncertainty business*” (Adams, 1995, p26).

rationale. Risk is not only something that should be respected in some kind of soft way – we respect your view, we might even change policy because of it, but we know it is really wrong and we aspire to something more rational – perceived risks matter and should figure in risk governance in a more sophisticated manner than simply being hurdles to overcome.

The importance of perceived risk is emphasised by psychological and sociological approaches to risk. Baldwin and Cave (1999, p141) note several factors which have been said to impinge on perceptions of seriousness of risk, including: catastrophic potential; degree of control over the risk; familiarity with the risk; degree of equity in sharing risk; visibility of the benefits of risk taking; potential to impose blame on risk creators; delay in manifestation of harm; and, voluntariness with which the risk is undertaken. Sociological approaches also stress how these differing perceptions are influenced by social and cultural factors.

Three common reasons for differences in perceived risks and rationales are variations in controllability, voluntariness and familiarity. Voluntary, controllable and familiar risks are generally perceived to be much lower than the involuntary, uncontrollable and non-familiar (OECD, 2003, p55; Lupton, 1999, p106). An obvious example of uncontrollable risk is the contrast between air and rail travel, where the risks are not controlled (beyond the decision to travel in the first place), and car travel where risks taken are controlled. It is well known that risks of the air travel are perceived to be much higher and car travel much lower than they are. High voluntary risks, such as smoking, are also accepted much more readily than lower involuntary, such as small amounts of toxins in the environment (OECD, 2003, p55).

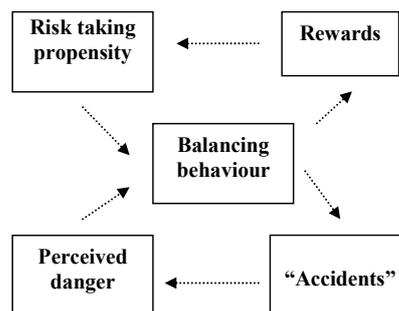
Many interesting examples of risk and the differences in familiarity can be cited. One's own home, particularly if lived there for much of life, is highly familiar and generally perceived as safe, even when it is situated in a highly dangerous area such as near a volcano or unstable ground liable to landslide (Lupton, 1999, p106). In contrast most people are very concerned about unfamiliar risks even if accident data show that they are tiny. The statistics, for example, on shark attacks on humans in warm coastal waters or bear attacks in north American wildernesses are tiny compared, for example, to deaths on urban roads (even accounting for the big differences in numbers of people exposed to such risks). Yet most people would be highly concerned and wary about the former risk and relaxed about the latter. Even non-familiar deaths of a tiny number of others can lead to global concern and the expenditure of huge resources. A high profile example is space flight, notably the near disaster on the Apollo 13 moon mission in 1970. Few would quibble about the expense and effort to save the three astronauts, yet risk (in the scientific sense of the probability multiplied by numbers of deaths) was low because the numbers of deaths would have been very small (only 3) and should not have led to such high concern and expenditure (though of course high drama added to the global interest).

The argument therefore is that perceived or subjective risk is important, it does matter and cannot be reduced to something that is merely irrational and tolerated only until such time when the ignorance is overcome. Nevertheless in this view subjective and objective risk remain clearly different and distinguishable concepts. There is still an underlying real probability of hazardous outcomes irrespective of the view of the subject and this can be analysed and quantified, even if in responding to risk the views of the subject have to be accounted for.

However, it can be argued that there is an intrinsic inseparability of subjective and objective risk and this reinforces the importance of subjective risk. This point is forcefully made by

Adams who argues that subjective risk can affect objective risk. In the scientific approach, objective risk can be derived from real observed behaviour and outcomes, not those that are in the mind of the subject (Adams, 1995). Adams's critique is that the subjective perception of risk affects real behaviour by subjects and then can change actual outcomes and thus 'objective' risk. In effect risk becomes an 'interactive' phenomenon (Adams, 1995, p23). There is a 'risk thermostat' process in which the balancing behaviour of human beings interacts with their propensity to take risks, rewards, perceived danger and actual accidents. **Figure 5** illustrates this process which is a simplified 'impressionistic, conceptual model, not an operational one. ... The arrows indicate directions of influence and their sequence.' (Adams, 1995, p15).

**Figure 5: 'The risk thermostat' (Adams, 1995)**



The process of course varies greatly between cases but two examples can illustrate it. A road which appears dangerous to many people who use it can have low accident figures and thus appear objectively safe. The accident figures, however, are low not only because of the objective design of the road but also because people modify their behaviour in the presence of a perceived dangerous environment. Whether the road design is the right policy response is not obvious. People might quite reasonably prefer a safer environment and not have to cope with stress of modifying their behaviour to cope with the perceived danger. Decision makers who base their decisions only on actual accident figures often fail to recognise this: their objective view is from actual accidents is that the road is safe so no new spending is required to make it safe.

A more specific example is a study of the use of a herbicide (Agent Orange) by British agricultural workers (Lupton, 1999, p109). Scientists and the manufacturer claimed it was not hazardous 'if properly used'. In the real world, however, its use, ie, behaviour by workers, was different from the ideal world due to the particular contingencies of their work. In effect the real danger, ie, real accident outcomes were a result of the perceived dangers (lower than they should have been), the actual working environment and the balancing behaviour.

In summary Adams notes that "*behaviour can be measured but its causes can only be inferred*" (Adams, 1995, p23). The scientific model thus draws the false conclusion that because behaviour and outcomes can be objectively measured, they have an objective cause, and thus can objectively be remedied. However, as these examples and argument illustrate, while real accident outcomes can be measured and therefore are objective, it does not follow that their causes are also materially objective, eg, the design of the road.

## APPENDIX 3

### SYSTEMIC RISKS AND THE 'RISK SOCIETY'

The idea that there is an important unquantifiable and incalculable dimension of risk is a key aspect of what some see as emerging 'systemic risks' (OECD, 2003) and the rise of the 'risk society' (Beck, 1992; Adam et al, 2000). In a substantial report the OECD argues that 'emerging systemic risks' are becoming much more significant in the 21<sup>st</sup> century and that "*according to more than one measure, the damage caused throughout the world by many major risks appears to have increased in recent decades*" (OECD, 2003, p30).

In the modern world we are increasingly dependent on complex, interdependent, technological 'systems', and it is our vulnerability to damage to these systems which is of concern in the 21<sup>st</sup> century (OECD, 2003). These systems include, for example, health services, transport, energy, food, water supply, communications, and financial services. It is not only the risk of technological failures but also natural disasters such as diseases, earthquakes, floods, storms and droughts (extreme weather events are seen as more likely in the 21<sup>st</sup> century due to climate change), and human actions (terrorism, other criminal activity and accidents). The OECD's central point is that modern society is increasingly dependent on complex interdependent technological systems which are vulnerable to a number of hazards and in themselves can be a cause of new hazards, such as the spread of disease.

New forms of risk in modern society have been broadly conceptualised by Ulrich Beck as the 'risk society' (Beck, 1992). Beck puts forward a sophisticated analysis of late modernity which has been subject of much debate, analysis and critique which can only be touched on here. In the risk society, scientific and technological developments together with an allied set of social, economic and political conditions have given rise to a set of risks and hazards the like of which have not been experienced before (Adam and van Loon, 2000). A view from modern science and technology would contend that as these risks have been created by human knowledge and ingenuity, they can be understood and controlled by the same ingenuity. A central aspect of the risk society is a critique of this view: many modern risks and hazards are inherently unknowable, unpredictable and unpreventable.

'Manufactured uncertainty' is created from complex interdependencies and interactions of component parts which while, on their own are understandable, as a whole they are not. Science and technological developments progress in an incremental manner and not in a systemic or holistic way but, as is well known in systems analysis, there can be unexpected and unforeseen 'emergent' phenomena. 'Big Science' gives rise to products and processes which are added incrementally to a complex whole of science, technology, life, environment, society, politics and the economy.

"Created for specific functions and without cognisance of the networked interconnectivity of life, technological products enter the living world as "foreign bodies". Once inserted into the ecology of life, they begin to interact with their networked environments and from that point onwards scientists and engineers have inescapably lost control over the effects of their creations" (Adam and van Loon, 2000, p6).

Undoubtedly many risks and hazards have been reduced by science and technology, however, the risk society argument tells us that uncertainty, not quantifiable risks, has arisen out of technological change.

The risk society thesis has been subject to a rather obvious but nevertheless compelling critique. We (at least in the developed world) live in a much safer world than that of our forefathers, and this has been created overwhelmingly by science and technology. There was significant risk and hazard in the Middle Ages, even if it was mainly due to natural causes and perceived as fate or acts of God, though the global spread of the bubonic plague was partly due to the rise of international trade and shipping (Kemshall, 2002, p8). Life expectancy was much lower than today and infant mortality much higher 100 years ago not to mention the Middle Ages prior to the scientific Enlightenment and the industrial revolution. How many would prefer to live in Middle Ages or even the 19<sup>th</sup> century? Few one suspects. Modern notions of risk and hazard, it has been argued, are hugely overplayed in a 'culture of fear' about scientific and technological achievements that have done much good (Furedi, 2002, pp56-62).

These are valid points but focusing on the appearance of a quantitative reduction in risk and hazard in modern society misses the central point about late modern risk society. The risk society argument is primarily that the qualitative nature of risk has changed. While overall risk and hazard may or may not have declined, what is clearly different is that human induced risks have increased even if natural ones have declined and the consequences of the former are much more wide ranging both geographically and across and within populations (Kemshall, 2002, p8; Scott, 2000, p36). Also we do not know whether overall risks have increased or not. While many everyday risks such as disease and hunger have palpably declined, other human created risks might have created greater dangers, the most obvious one today being climate change. The latter of course is significantly affected by psychological factors such as its catastrophic potential (high), degree of personal control (very low), and delay in manifestation of harm (high).

## APPENDIX 4

### RISK AVERSION AND RISK SEEKING

There is a widespread perception that we live in a risk averse society and this has had consequences. This can be quickly confirmed by internet searches using the terms ‘risk averse’ or ‘risk aversion’. One report, for example, describes Britain as once an “*upbeat, outgoing sort of race*” willing to take risks, but now strangled by a “*collective timidity ... now so serious that it is posing a threat to our willingness to take on almost any sort of challenge*” (Rogers, 2007).

It is argued that a ‘culture of fear’ has developed in recent decades affecting a whole swathe of public and private activities (Furedi, 2002). We have become suspicious of strangers and lack trust in anything in the public space from unprotected public transport to trees that may fall down or be dangerously climbed by children. A ‘compensation culture’ has developed in which there is no such thing as an accident, only a ‘preventable injury’; people busy themselves investigating which authority to sue for all minor negative consequences rather than learning a lesson and resolving to be more resilient next time (Rogers, 2007).<sup>70</sup> Although often considered to be a British failing or even European failing (a former chancellor described modern Germany as the ‘angst society’ (Scott, 2000)), the US has also been said to ‘share our risk paranoia’ (Rogers, 2007). For example, Furedi (2002, p7) notes the difference in the reaction in the US between the spectacular space disasters in 1967 (Apollo 1) and 1986 (Challenger). In the late 1960s the moon project was not seriously set back while after the Challenger disaster there was a “*full-scale panic that led to a loss of nerve*” (ibid).

Risk aversion can be seen as closely connected to if not synonymous with the risk society (Furedi, 2000, p.64): “*the ‘risk society’ might be more appropriately labelled as the risk-averse society*” (Scott, 2000, p39). The risk society appears to be one in which “*not taking risks is positively advocated*” and indeed portends a world in which the elimination of risk altogether is the ultimate objective (Furedi, 2000, p.64; Scott, 2000, p36).

Risk aversion is a problem according to those who put forward the argument, because it prevents us from taking opportunities to create a better world which, paradoxically, is likely to be a safer world. The particular argument of the BRC is that risk aversion and the compensation culture lead to overregulation which stifles innovation and reduces opportunity (BRC, 2006). The chairman of the BRC is reported to have declared that “*our national resilience, self reliance and spirit of adventure [are] being destroyed by a pervasive cultural demand for the elimination of all risk*” (Rogers, 2007). An over concern with risk can also backfire. Highly concerned parenting can lead to children growing up without the basic skills and awareness ‘street knowledge’ to deal with risk in the world outside the cocoon of home and they are more vulnerable to hazards when they inevitably have to face the dangers of the world outside. Similarly those who try to eliminate risk with paranoid cleanliness in the home may not develop immunity to everyday bacteria and can be more at risk when they venture out to the outside world.

The idea that we live in a risk-averse society and this has deleterious consequences is therefore undoubtedly widely held. However, before considering the consequences for governance, policy and regulation we need to stand back a little and critically examine some

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<sup>70</sup> Blunden A (2005), ‘Fear, Anxiety and the Cult of Safety’ January, <http://home.pacific.net.au/~andy/works/cult-safety.htm>

of the assumptions. There are some important questions which need investigating. Given that criticism of risk aversion is widespread, not everyone is risk averse, only some parts of society and the state. We can ask, who is risk averse and how widespread is risk aversion? Is risk aversion necessarily bad and might it be balanced in any way by risk seeking? What are the causes of risk aversion?

It is worthwhile clarifying what risk aversion is and what is bad about it. If risk aversion means avoiding risk in many day-to-day activities it can be asked what is wrong with that? Is it not normal and reasonable human behaviour? How many of us choose to walk on roads with fast traffic rather than on the pavement? How many would live or work in a building which has untested gas and electricity equipment fitted by unqualified people, or out-of-date fittings such as lead pipes or asbestos fire protection? How many would drive at speed an old car that has failed its MOT test and has bald tyres? Or ride on a train network that has one, two or more major accidents a year? Endless similar examples could be dreamed up. Some might do these things but the majority, quite reasonably it seems, would not.

It might also be noted that perhaps the majority do not want to be risk takers, pioneers and entrepreneurs; they are quite happy with a low risk world and wish to live low risk lives. Indeed the notion of progress itself can reasonably be thought of as progress towards a low risk world. The move towards a lower risk world is manifested in, for example, the long term decline in workplace deaths which has been stressed elsewhere by the HSE (HSE 2004; HSE 2001 p6). The HSE also note a change in public attitudes from fatalistic acceptance of risk towards a desire for greater reassurance that systems are capable of controlling the risks and that there is an increasing idea that imposing risks on people needs to be justified (HSE, 2001, p18). It might be reasonably argued that these are the kind of things we expect with progress.

Avoiding risk in certain circumstances therefore cannot on its own be said to be bad. The negative connotation of risk aversion must in some way be 'excessive' risk aversion. The difficult question, however, is when does reasonable risk aversion become excessive risk aversion? A possible answer to that question might be derived from considering the economists' idea of risk aversion.

### **Economists' Notion of Risk Aversion**

Risk aversion is a well established concept in economics (Rabin and Thaler, 2001; Hansson, 2007). It can be identified quantitatively and in essence relates to the attitude of investors towards risk, particularly the value placed on the possibility of gaining a certain amount compared to that of losing it in particular risk situations. Understanding risk aversion is normally undertaken by drawing on some variation of an illustration about a choice between two (financial) scenarios, one certain and the second involving a 50-50 chance. Depending on that person's willingness to take risk they can be 'risk-neutral', 'risk-averse' or 'risk-seeking'.

Suppose a person has a choice between (i) a 50-50 chance of receiving £100 or nothing or, (ii) a certainty of receiving £50.

They are:

- risk neutral if they are indifferent towards the two choices;
- risk averse if they prefer to take the £50;
- risk seeking if they take the 50-50 chance of gaining £100 or nothing.

Risk aversion increases as the amount they choose to take for certain declines. Thus they would be more risk averse if the lowest amount they would take for certain was £30 than if the amount figure was £40 (there is a threshold somewhere – few if any would take 1 penny for certain if there was a 50-50 chance of gaining £100). Similarly they would be more risk seeking if they would choose the 50-50 option as opposed the certain option up £70 rather than up to £60 (again there is a threshold – nobody is likely to gamble £99.99 in the hope of winning £100).

Investors are generally seen to be risk averse. They value not losing a certain amount, say £50, more than the 50-50 chance of gaining an extra £50 or losing the £50. This is due to the concept of ‘diminishing marginal utility’: the displeasure of losing £50 is greater than the pleasure of gaining £50. That is, the richer we are the less we value a particular sum of money such as £50. In simple language, risk aversion is higher in richer societies: the more we have the less we are willing to risk losing it in order to try to gain more.

This view of risk aversion seems to correlate with the qualitative views in different advanced countries noted above. Thus it would be no surprise that Germany, one of the world’s richest countries has a highly risk averse society and no surprise that risk aversion in countries such as the US and UK has increased significantly between the 1960s and 1990s during which time their economies grew substantially.

While an idea of risk aversion more suitable for real decisions in the real world could theoretically be derived from this economist’s idea, in practice it is difficult. As noted above, with the exception of highly controlled circumstances, it is extremely difficult to know the quantitative probability of particular outcomes with any degree of certainty. Moreover, often we do not know what the possible outcomes of particular decisions might be, not to mention their probability. A qualitative practical idea of risk aversion can therefore be little more than an excessive concern about the consequences of a negative outcome compared to a positive outcome.

### **How Risk Averse is Society?**

To what extent does excessive and wide ranging risk aversion exist? There are doubts about how risk averse society is. The House of Lords, for example, concludes that they “*could find no clear evidence to justify the widely-held view that the public are excessively risk averse or that Britain has become an increasingly risk averse society*” (House of Lords, 2006, p31). Also, while some of the stronger critics of risk aversion cite many compelling examples, they rarely attempt to consider the possibility that some aspects of modern society may be risk-seeking and to consider the overall balance of risk aversion and risk seeking (eg, BRC, 2006; Furedi, 2002). Just how embedded in modern society and life is risk aversion, and how marginal is risk seeking?

It is not too difficult to think of examples of risk seeking (or at least non risk aversion) in large swathes of the population. Despite much information and education pointing to the dangers unhealthy eating and drinking alcohol, smoking and drug taking, there are significant elements of society who are happy to take risks. We see in modern Britain an ‘obesity epidemic’, a ‘binge drinking’ culture amongst many young people and a significant minority still smoke. Regular road users will see examples of dangerous car driving and motor bike riding on almost every journey (if they do not do it themselves). So called ‘extreme sports’ – extreme skiing, mountain biking, bungee jumping, rock climbing and mountaineering – are on the rise amongst a minority in the rich countries. Pleasures and thrills are clearly being

sought by many who partake in these activities but the potential risks appear high and death and serious injuries are frequently reported (Lupton, 1999, pp148-172).<sup>71</sup> A rather different example is the increasing general acceptance of the flexible and insecure work culture in contrast to the 'job for life' idea.

It is also questionable the extent to which a compensation culture in the UK has developed. For example, a House of Lords report in 2006 stated that little evidence could be found of a compensation culture. The report notes that the "*total number of legal compensation claims, including claims dismissed and claims settled out of court, has in fact been falling over recent years*", though there has been an increase in the value of claims from catastrophic injuries (House of Lords, 2006, p14). In 2000/01 there was a total of 612,000 claims and in 2004/05 579,000 claims.

These examples of course do not prove that we live in a risk-seeking society and that risk aversion is not significant. They do indicate, however, that the attitude towards risk in modern society is more complex, varied and subtle than common perceptions of risk aversion tend to suggest. Attitudes towards risk vary between individuals in complex and subtle ways and not simply along a one dimensional spectrum between from high risk aversion through risk neutral to high risk taking.<sup>72</sup> Those who make the risk aversion argument stress that the general public's judgement of risk is normally higher than that of the experts' judgement. It is certainly true that the public's and the experts' views often differ dramatically but the difference is not always in the same direction.<sup>73</sup> Experts tend to see the dangers for example of nuclear waste as much lower than the general public while in contrast experts see the dangers of not wearing seat belts in cars, smoking, or even greenhouse gas emissions as much higher than the public (Margolis, 1996, pp1-3).

Risk-seeking behaviour (or non risk aversion) and risk-aversion therefore often co-exist in varying mixes. As Kemshall (2002 p3) notes, risk taking (eg, buying a lottery ticket) and risk avoiding (eg, avoiding certain foods in the face of the low probability of contracting BSE) occur at same time. Risk is not simply about calculating odds, nor about an overly risk averse society. Attitudes towards risk are variable, for example, people seem happier with known risk rather than unknown. There were widespread concerns about the very small but unknown risk of BSE while many continued with the much larger but known risk associated with smoking (Kemshall, 2002, p9).

The attitude towards risk is also ambivalent and complex even amongst the minority of the population who appear to actively seek risk through extreme sports or other activities. Undoubtedly participants in these activities seek thrills and excitement, but it is not clear the extent to which they seek real danger. The increasing participation in 'extreme' activities might be the desire to escape the banal and bland of modern life but it also could be because safety equipment and procedures mean that these activities are not as dangerous as they appear. How many would bungee jump if they knew that 1 in 100 people who did it were killed? How many would go on fairground rides if there was a serious accident once or twice a year? These activities might provide the feeling or illusion of danger but real dangers are low and if they were higher far fewer would participate.

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<sup>71</sup> Leach R E (2000), Editorial: I am Not Risk Averse, *The American Journal of Sports Medicine*, 28:6, p777.

<sup>72</sup> Zaleskiewicz T (2001), Beyond Risk Seeking and Risk Aversion: Personality and the Dual Nature of Economic Risk Taking, *European Journal of Personality*, 15, S105-S122.

<sup>73</sup> Margolis H (1996), *Dealing with Risk, Why the Public and the Experts Disagree on Environmental Issues*, University of Chicago Press.

In addition, in activities where real dangers are much higher, such as high altitude mountaineering, the actual risks are not always fully internalised by mountaineers. Faced with high real risks (about 1 in 10 of those who have attempted to reach the summit of Mount Everest have died in the process – on more difficult mountains such as K2 the figures are closer to 1 in 5) most believe that by dint of their competence, equipment, precautionary judgement, or supervision by expert guides they are not putting themselves in such extreme danger. (This is similar to reckless and speeding car drivers who often believe that a combination of their supposed good driving ability and a high specification car means that they are safe). With regard to introduction of better safety equipment for mountaineering the critic of risk aversion, Frank Furedi, notes a rather simple view that this is mainly due to the risk averse ‘safety-conscious professional’ rather than the young climbers who seek the ‘frisson of risk’ (Furedi, 2002, p4). The reality, however, is that most mountaineers and climbers are very keen and willing to use new, better and safer equipment and indeed many of them are avid seekers and consumers of the latest gear. They want the thrills but they also want a very high chance that they will live to tell the tale. Among all but a small reckless minority there is a complex relationship between risk seeking, excitement, caution and safety.

### **What Causes Risk Aversion?**

Society, therefore, seems to contain a complex and variegated mix of risk aversion and risk seeking behaviour. Although more complicated than the common perception, it seems that some degree of excessive risk aversion exists. If we want to do something about it, a key question is, what causes it? In the literature many arguments of varying depth and credibility are presented.

One argument is that a new ‘industry of fear entrepreneurs’ – lobby groups, campaigners, regulators and inspectors have been created “*whose livelihoods depend on fuelling concern about the dangers of everyday life*” (Rogers, 2007). Arguably it is particularly consumer and environmental groups who are responsible: they “*enjoy an unprecedented degree of adulation in the media and public life*” (Furedi 2002, p174). However, this is a limited argument as it is not clear whether these elements in society are the main cause of the risk averse society or an effect of it. At most it seems that they have exacerbated an already existing trend.

There are arguments about the cause of risk aversion which derive from advanced and advancing industrial society that have been discussed above. There is the economics argument about diminishing marginal utility, ie, the wealthier we get the more risk averse we come. There is also the risk society argument about late modernity – more and more risks are becoming beyond an individual humans ability to understand and control. Thus our response is to become more concerned and risk averse.

There is also an argument that risk aversion amongst professionals, for example, in the health care or social work areas, arises from an increasing tendency to apportion blame and for individual accountability (Lupton, 1999, p46; Kemshall, 2002 pp9-10, 53). Rather than small probability negative outcomes being accepted, that they will occasionally and unpredictably happen someone has to take responsibility. The view is, as noted above, that there are no accidents, only preventable injuries. Within this culture it seems inevitable that professionals will become ever more cautious and risk averse to reduce or eliminate the chances of being blamed for an accident.

There are also arguments that there is excessive risk aversion amongst policy makers. In particular, there is concern that “*the assessment and incentive system for civil servants may*

*effectively emphasise the adverse impact of failure rather than the gains from success and may consequently induce a culture of risk-aversion among those responsible for the formulation and implementation of risk policy*” (House of Lords, 2006, p31). Disentangling the roots of risk aversion in policy making, however is no easy task. Whether it derives from something inherent in government and policy making or whether it is a response to risk aversion in society is extremely difficult to ascertain.

These arguments, however, appear at best to be partial, and possibly just assessing symptoms rather than causes. There are more grounded arguments which focus on the structure of society.

### ***Structure of Society: too collectivist or too individualist?***

There is an argument that modern society is too collectivist. In an increasingly collectivist world, individuals expect organisations, society and the state to reduce risk and develop a safer world. In return the state and collective organisations strive more and more to reduce risk by intervening in the actions and activities across society, industry and the economy. This is the essence of the BRC’s argument; the damaging consequences of collectivism is overregulation which thwarts industry and the economy and stifles individual responsibility and risk taking. This chimes with a common view that the US is a less risk averse and more entrepreneurial society than Europe (many internet sites make this assertion). A classic ‘Bushism’, “*the thing that’s wrong with the French is that they don’t have a word for entrepreneur*” neatly expresses this idea (as well as a comment on the literacy of George Bush).

However, the social science literature focuses predominantly on the rise of individualism and neo-liberal political economy and even the rise of the very notion of risk within public and political discourse. Many argue that neo-liberalism, and the higher profile of the idea of risk, has shifted the focus of risk from society to the individual (Webb 2006; Kemshall, 2002, p31, Lupton, 1999, p101). There has been a ‘privatisation of risk’ and many issues that were clearly seen to be public matters have been transformed into ‘private troubles’ (Kemshall, 2002, p8). Risk taking by the individual has been promoted by the state in a wide range of areas such as health and old age insurance (Kemshall, 2002, p31). Risk aversion in professions has increased due to social policy moving from alleviation of needs towards the reduction of risk and displacement of risk management to the individual (Kemshall, 2002 pp21-22). As risk management by individuals is stressed more and more risk avoiding behaviour becomes viewed as a moral behaviour which involves self control and internalising the objectives of the government (Lupton, 1999, p91).

The increase in individualism has led to a fragmentation of life and is also associated with a decline of trust in communities, social institutions and the state. The lack of trust, for example, is seen as the main reason for the big difference between experts and the public regarding the risks associated with technological hazards.<sup>74</sup> Individualism is leading to the compensation culture as people turn in on themselves and lack trust in society (Rogers, 2007). Furedi notes the ‘erosion of social solidarity’ and that “*the process of individuation and the weakening of relations of trust contribute to an intense sense of isolation*” (Furedi, 2002, p171). Blunden stresses that commodification and the modern consumer orientated society causes problems: “*the archetypal form of suffering today is to be swindled*” (Blunden,

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<sup>74</sup> Slovic P (1999), Perceived Risk, Trust, and Democracy, in Cvetkovich G and Lofsted R E (eds), Social Trust and the Management of Risk, London: Earthscan, p43.

2005). The stress then is on overcoming the failure of the consumer-provider relation by taking out insurance or suing the provider. As Furedi notes, this rise of the active consumer is a rather poor response to individualism, and amounts to reconciling people with 'estrangement' and accommodating their powerlessness; it is a poor substitute for and reinforces the disengagement with civil and political life (Furedi, 2002, pp171, p184).

## APPENDIX 5

# THE BRC'S REPORT 'RISK, RESPONSIBILITY AND REGULATION: WHOSE RISK IS IT ANYWAY?'

## SUMMARY OF THE RECOMMENDATIONS AND GOVERNMENT'S RESPONSE

**Recommendation 1.** Government should emphasise self-reliance and innovation; leave the management of risk to those best placed; re-examine areas where the state has assumed more responsibility; separate fact from emotion and balance protection with risk.

**Response:** Government accepts this and stresses it is taking 'genuine action to improve regulation', it seeks to articulate acceptable levels of risk and where intervention is justified it will explain its rationale in an Impact Assessment.

**Recommendation 2.** Establish an independent 'Fast Assessment of Regulatory Options Panel' to advise government on effective and appropriate options to respond to incidents, accidents and issues.

**Response:** While accepting that the response to incidents and accidents should be improved, the government rejects the idea of establishing the Panel. It would not have the wide ranging expertise and credibility and might simply add to the existing multiple forms of official advice and do nothing for clarity.

**Recommendation 3.** The responsibility for managing risk should be targeted at those best placed to manage it.

**Response:** Government accepts this and expects Impact Assessments and post implementation reviews to identify risks and appropriate places where it should be managed.

**Recommendation 4.** The high costs of risk management should be reduced. By end 2007 each department and agency should work with BRC/BRE to identify principal risks and outcomes their interventions are designed to achieve. Costs involved in reducing risks to target levels should be assessed and published.

**Response:** The government accepts this, though argues that continuing improvements are necessary, many departments and regulators undertake this as a normal part of their business.

**Recommendation 5.** Government should examine the conditions in which the management of risk can be better undertaken by the provision of information to consumers.

**Response:** Government accepts this. It has been part of the work of some departments and agencies (notably the Food Standards Agency) but further investigation is required.

**Recommendation 6.** The stock of regulation should be reviewed to assess whether it allocates risk appropriately and consider whether any regulatory changes are required.

**Response:** The government accepts this. It notes that 'Simplification Plans' which have been underway set out how government departments will reduce administrative burdens and commit to making post implementation reviews at times identified in the Impact Assessment.

**Recommendation 7.** There should be a campaign launched in 2007 against regulatory inconsistencies and absurdities.

**Response:** The government accepts this. The relaunch of the better regulation portal in early 2007 is part of the process which addresses this.

**Recommendation 8.** High quality training on risk management and understanding risk should be provided including a specific module on communicating risk and handling the media.

**Response:** The government accepts this. It agrees that risk training for ministers, members of regulatory boards and senior civil servants would be useful and the National School for government is considering how to undertake this.

**Recommendation 9.** The Cabinet Office better regulation minister and better regulation champions in departments and regulators should be made accountable for ensuring regulation takes appropriate account of risk.

**Response:** This is accepted in part. The better regulation minister and BRE will continue to work with departments and regulators. However, it is the individual minister, not the better regulation minister who should be accountable overall for ensuring regulation takes account of risk.

## **APPENDIX 6**

# **SUMMARY OF NAO'S EVALUATIONS OF IMPACT ASSESSMENTS**

### **Problem Definition and Policy Objectives**

A clear analysis and definition of the problem to be addressed and a clear statement of the policy objectives form the foundation of the IA process. The remainder of the IA process is highly dependent on this: *“a robust analysis of the problem will allow departments to consider how their objectives relate to the problem; to identify and analyse alternative options; and to analyse the relevant costs and benefits of the proposed regulation”* (NAO, 2005, p15). In this area the NAO report general improvement from 2004 when half of the sample did not contain a clear statement of objectives to 2007 when 15 out of 19 *“provided a sound description of the problem, rationale for intervention and the objectives”*.

### **Policy and Regulatory Options**

One of the main purposes of the IA is to evaluate different policy and regulatory options in order to provide a substantial justification for the preferred option. In particular the analysis should include the ‘do-nothing’ option which can be considered as the ‘counterfactual’ to action (NAO, 2005, p16). There has been some improvement in this area between 2004 and 2007. In particular while in 2004 most did not include the do-nothing option in 2007 most did. There is still a sense, however, that alternative options, including do-nothing, are not fully analysed. It is not fully clear that the preferred option emerged as a result of the IA analysis or was favoured for other reasons established earlier in the policy and regulatory process.

### **Consultation**

Good consultation has been seen to be crucial since the inception of IAs (NAO, 2001, p23). Consulting effectively can establish whether policy ideas are workable, whether there are any important omissions, possible unintended consequences or impacts beyond those targeted by the regulation. Good consultation can also aid the analysis of problems, for example, by data for cost-benefit analysis supplied by consultees. In 2004 the NAO noted that *“consultation was generally the strongest element of the process in our sample”* (NAO, 2004, p21). Since then most consultations in the sampled IAs have had good quality consultation.

### **Costs and Benefits**

Analysis of the costs and benefits of policy and regulatory options is seen to be the core analytical process of the IA (NAO, 2005, p17) which can help *“policy makers to determine whether the costs, including implementation costs, are proportionate to the benefits, determine whether particular sectors are disproportionately affected and make choices between options”* (NAO, 2001, p26). In all its evaluations of IAs the NAO identifies many shortcomings with the analysis of costs and benefits. In 2001 the quality of analysis was described as ‘variable’ and there were doubts as to whether the appropriate experts and techniques were deployed (NAO, 2001, p26). There have been some improvements but in 2007 the NAO noted that *“while there were examples of good practice, the assessment of costs and benefits continues to be the weakest area of RIAs”* (NAO, 2007a, p11). In 2007 the involvement of the appropriate experts such as economists was still seen to be limited and insubstantial (NAO, 2007a, p15).

In all evaluations the NAO stress that better quantitative analysis could be undertaken. They recognise difficulties in quantification, notably quantifying benefits, obtaining reliable data and the dangers of spurious accuracy, and that qualitative techniques are sometimes necessary (NAO, 2001, pp5,6,13; NAO, 2004, p33; NAO, 2007, p17). Nevertheless they stress that IAs often lacked good quantitative evidence (NAO, 2007a, p11; 2006, p10). While quantitative uncertainty is one reason for the limited quantification the NAO stress that more use should be made of range estimates and sensitivity tests (NAO, 2004, pp31-32). This is also necessary to avoid the appearance of spurious accuracy when single point estimates are used.

### **Compliance and Enforcement**

Regulations are designed to encourage behavioural change but they can only achieve that if they are complied with and enforced. Processes of compliance and enforcement can impose costs on the regulators and regulated and costs and benefits can change substantially if compliance is not full. Processes of compliance and enforcement should therefore be analysed in the IA process and the impact of differing levels of compliance should be considered (NAO, 2006, p19). This criteria is seen to be one of the weakest in the NAO's evaluations. While there has been some improvement from the early 2000s in 2007 the majority of IAs did not consider issues of compliance and enforcement in any depth.

### **Monitoring, Review and Evaluation**

The NAO notes that *“good quality RIAs will outline how the regulation and its effects are to be implemented, measured and monitored and describe the reviews and evaluations which will be used to judge how far the regulation is achieving its defined objectives”* (NAO, 2006, p20). This is a recognition that ex ante analysis, though important, is no substitute from actual experience, and this experience might suggest changes are necessary. It has been recognised that processes of monitoring review and evaluation are not well established and not good (NAO, 2001, p9; NAO, 2004). This is one of the weaker areas of IAs. In 2004 there was little in IAs on monitoring and review. By 2007 some improvement was evident but overall performance was described as ‘mixed’.

### **Risk Assessment in IAs**

The Cabinet Office has noted that the IA is designed to include an assessment of the impact of policy options in terms of the risks of a proposal as well as costs and benefits (Cabinet Office, 2003, p5). The assessment of risks in the IA has been mentioned but not, however, treated at length or as a clearly separate criterion in the NAO's evaluations. Generally risk assessment is something that should be undertaken early in the IA process, particularly in relation to the problem definition. This amounts to assessing the risks of not regulating, ie, what are the risks, harms and hazards that gave rise to a policy and regulatory problem in the first place (NAO, 2001, p7). In 2001 and 2004 the NAO noted that in the analysis of the problem to be addressed most IAs included an assessment of risk but this was often vague and risks were not often quantified (NAO, 2001, p6, 2004, pp32-33). It is recognised that assumptions about risk often have to be made and quantification of risk can be difficult (NAO, 2001, p23). *“It may be difficult, sometimes impossible, to quantify risk”* and *“in these circumstances policy makers need to be the best use of the quantitative and qualitative data that is available”* (NAO, 2001, p33). Beyond 2004 the treatment of risk in the evaluations was little more than, for example, *“where possible, risks should be quantified”* and *“it can also be appropriate for departments to indicate the levels of risk using more qualitative measures”* (NAO, 2005, p15).

## IAs and Policy Making

Perhaps one of the most difficult matters about IAs is how they fit into established policy making processes most of which are deeply embedded, complex and variegated. The NAO's reports have engaged with this at some length, sometimes devoting a whole part of the report to it, for example in 2007 (NAO, 2007a, pp17-24). IAs are intended to be integrated into and inform all stages of the policy making process from setting the agenda, through policy development, to implementation and evaluation. A particular problem, however, is that policy making is rarely a systematic and rational process: *“political influences and other environmental factors can interrupt the policy cycle at different stages and often adherence to the policy cycle will lapse following implementation”* (NAO, 2007a, p17). As a result integrate and inform the policy process in varying ways, some of which fall below the standards of the ideal IA.

The NAO have identified three broad approaches to IAs in the policy process (NAO, 2005, p3):

- **Pro-Forma RIAs.** These are started late, after the key decisions have been made and have no impact on policy. They are only done because there is an obligation to do them and they are inadequately resourced and content is poor.
- **Informative RIAs.** These are higher quality IAs and a useful information and communication tool. However, they are also started late after key decisions and have limited impact on policy.
- **Integrated RIAs.** These are close to the ideal IA. They are started early, inform policy making, are well resourced with good analysis. They can challenge preconceived ideas and can lead to the adoption of a non-regulatory approach.

The first two approaches reflect many of the examples given in the NAO's evaluation reports and a general view on that IAs are too often retro fitted to existing decisions (this is supported in off the record views given to author by many policy practitioners).

The NAO recognise that the complexities of the policy process make achieving the ideal integrated IA a very difficult task. A particular problem is that policy and regulatory proposals are often intertwined with other policy initiatives and rarely self standing. These initiatives might for example be EU legislation which needs to be complied with or other policy commitments already made by the government (NAO, 2007a, p19). The role of parliament in the policy process is clearly crucial in a democracy but IAs have not been effectively integrated into parliamentary committees and debates (NAO, 2007a, pp19, 22).

**Summary of NAO's evaluation of Impact Assessments, 2004-2007**

<b>IA theme</b>	<b>2004 Sample of 10 IAs</b>	<b>2005 Sample of 10 IAs</b>	<b>2006 Sample of 14 IAs</b>	<b>2007 Sample of 19 IAs</b>
<b>Problem definition &amp; objectives</b>	Half of the sample did not contain a clear statement of objectives. Not clear whether the problem would partly be dealt with by other regulations. Two mixed objectives with proposed measures	Eight contained 'good or acceptable risk assessments which set out the current problem'.	Five contained good analysis. 7 had some good analysis but room for improvement. 2 had major defects.	15 IAs 'provided a sound description of the problem, rationale for intervention and the objectives'.
<b>Options</b>	Only two considered a range of options, another considered an option and the do-nothing option. The remaining 7 only considered the one preferred option and not the do-nothing (though 4 of those were implementing EU directives). In the latter cases decisions and announcements were made before the formal input of the IA.	Nine considered the do-nothing option. Some presented other options but only the preferred option was fully analysed. Implying it was preferred for reasons other than IA analysis.	'More structured consideration of non legislative solutions' required. The 'do-nothing' option still omitted in many IAs	'All RIAs presented a "do-nothing" option' but this was often presented as unrealistic. This may indicate that the IA was started too late in the policy process
<b>Consultation</b>	9 IAs had undertaken at least one thorough consultation. Interested stakeholders were consulted and a variety of techniques adopted. IAs included a good summary of responses. But only half allowed the recommended time, and some risked appearing to ignore responses.	Generally undertaken well with 9 IAs having formal consultations. Documents fairly clear, some examples where consultations informed analysis in final IA.	10 IAs had good quality consultations with room for improvement in 3. There was evidence of flexibility in consultations and clear attempts to improve practice.	16 IAs had good quality consultations. In one case there was limited time to complete the normal 12 week consultation period. In two others no consultation was undertaken.

### Summary of NAO's evaluation of IAs, 2004-2007 (cont)

<p><b>Costs &amp; benefits</b></p>	<p>Some quantification in 9 IAs and acknowledgement of uncertainty. But uncertainty not in figures – estimates in 9 IAs were single points, not ranges, only one IA gave sensitivity results. Benefits more difficult to assess than costs but departments could draw on expertise to make better estimates. Better qualitative assessment of benefits could be undertaken when quantification not practical.</p>	<p>8 IAs included quantification of costs and 4 of benefits. Estimates for all options should be presented, not just the preferred. Only costs and benefits relevant to the proposed option should be considered. Many estimates still single point rather than range, sensitivity results. Level of uncertainty not always clearly reflected.</p>	<p>6 IAs considered to be good. 5 with room for improvement. 3 with major defects. Areas for concern are unwillingness of some departments to subject analysis to external scrutiny and lack of data in IAs for 'framework' legislation.</p>	<p>5 IAs considered to be good. 10 with room for improvement. 4 with major defects. A lack of quantitative evidence in those not good. 11 provided broad descriptions only rather than economic evaluation. Only 4 made comparisons of alternatives. Only 6 did sensitivity analysis. Involvement of economists often too late and limited in scope.</p>
<p><b>Compliance</b></p>	<p>In almost all cases analysis was conducted on the assumption of 100% compliance. Only one IA was conducted on non-compliance in first year. Compliance less than 100% will affect cost-benefit analysis. Analysis of different levels of compliance using sensitivity testing should be conducted.</p>	<p>No presentation in any IA of different levels of compliance, all assumed 100% compliance.</p>	<p>Most IAs still weak on different levels of compliance. Only two were rated as 'good'. 6 were rated as having room for improvement. 4 had major defects.</p>	<p>Only 4 were rated as 'good'. 6 were rated as having room for improvement. Still the majority of IAs did not investigate compliance in any depth. Enforcement and sanction arrangements were covered in some IAs but much scope for improvement.</p>
<p><b>Monitoring &amp; review</b></p>	<p>IAs contained little on how regulations are to be monitored and reviewed. 8 IAs said monitoring would be undertaken by another organisation but provided little information thereof. Only 4 IAs said there would be a formal review and only 2 specified a timeframe.</p>	<p>4 IAs provided some information on monitoring including timeframe. 6 gave little detail on arrangements.</p>	<p>The sample was still in general not good. 5 IAs rated as good 5 with room for improvement 3 had major defects. Those which were poor were mainly 'framework' legislation. Departments claimed that details would be developed later, NAO did not accept this.</p>	<p>Overall performance described as 'mixed'. 6 provided good detail on monitoring. 6 only provided a date for monitoring and review with little other detail. 6 provided very little information.</p>

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